ABSTRACTS

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ABSTRACTS
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International economics

2071. The World Bank's Unified Survey Projections: How Accurate Are They? An Ex-Post Evaluation of US91–US97

Jos Verbeek
(March 1999)

The Unified Survey projections prepared annually by World Bank country teams are not optimistic and have greatly improved over time — and they are more accurate than the International Monetary Fund's World Economic Outlook projections. Exogenously chosen variables — except for exports — are more accurate in the short run than the indicators calculated by the country model used. Inaccuracy is less pronounced in 1995 and 1996.

Since 1984, the Unified Survey has been the World Bank's principle mechanism for gathering quantitative macroeconomic information from country teams on Bank member countries. After gathering annual data those teams also do most-likely-scenario projections.

Verbeek examines the numerical projections of macroeconomic indicators carried out by World Bank country teams for Unified Surveys for fiscal years 1991–97. He studies the accuracy of short-term projects (for the current year, first year, and three years ahead) for 23 countries in the different World Bank regions. He also compares the Unified Survey projections with the International Monetary Fund's (IMF) projections for its fall *World Economic Outlook* (WEO).

He finds that:

• The Unified Survey projections are inaccurate when evaluated over the whole period investigated (1990–96). However, their accuracy has improved over time.

• Improvements are notable in projections for investment, GDP inflation, and government deficit. Projections of external indicators — such as import and export growth — are still substantially inaccurate and should be greatly improved.

• The Unified Survey projections are as accurate as — or more accurate than — the WEO projections.

• One cannot characterize the United Survey projections as optimistic.

This is the first systematic attempt to evaluate the accuracy of country team macroeconomic projections over time and the first to compare these with the IMF's WEO projections.

This paper — a product of the Development Data Group, Development Economics — is part of a larger effort in the Bank to evaluate its data products and its tools used to generate its quantitative projections. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mismake Galatis, room 04-086, telephone 202-473-1177, fax 202-522-2753, Internet address mgalatis@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at jverbeek@worldbank.org. (59 pages)

2072. Growth, Poverty, and Inequality: A Regional Panel for Bangladesh

Quentin T. Wodon
(March 1999)

Empirical work in Bangladesh shows that growth reduces poverty in both urban and rural areas — and is associated with rising inequality only in urban areas. It appears that promoting growth in rural areas rather than urban areas would reduce poverty more.

Most empirical work on how growth affects poverty and inequality has been based on international panel data sets. Panels can also be used within a country, if the analysis is carried out at the regional level.

Wodon does this for Bangladesh, where regional panel estimates indicate that growth reduces poverty in both urban and rural areas. Growth is associated with rising inequality only in urban areas.

Simulations based on these estimates indicate how much poverty reduction could increase in the next 10 years if growth were promoted in rural areas rather than urban areas.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, South Asia Region — was written as part of background work for the Bangladesh poverty assessment. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jillian Badami, room MC10-336, telephone 202-458-0425, fax 202-522-2428, Internet address jbadami@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at qwodon@worldbank.org. (40 pages)

2073. Politics, Transaction Costs, and the Design of Regulatory Institutions

Antonio Estache and David Martimort
(March 1999)

Providing a realistic framework for assessing the efficiency of government intervention requires viewing the government not as a monolithic entity but as a number of different government bodies, each with its own constituencies and regulatory tools.

Providing a more complete framework for assessing the efficiency of government intervention requires moving away from the idealistic perspective typically found in the normative approach to traditional public economics, contend Estache and Martimort. Such a move requires viewing the government not as a monolithic entity but as many different government bodies, each with its own constituency and regulatory tools.

Not only is the "multitiered" government limited in its ability to commit, but interest groups influence the regulatory process and impose significant transaction costs on government interventions and on their outcome.

Estache and Martimort discuss the nature of those transaction costs and argue that the overall design of the government is the result of their minimization. Among the points they make in their conclusions:

• Safeguards built into regulatory contracts sometimes reflect and sometimes imply transactions costs which influence, or should influence, the optimal tradeoff between rent and efficient in ways practitioners sometimes ignore.

• Most of the literature on transaction costs arising from government failures would agree that to be sustainable, regulatory institutions should be independent, autonomous, and accountable. How these criteria are met is determined by the way transaction costs are minimized, which in turn drives the design of the regulatory framework.

In practice, for example, if there are commitment problems, short-term institutional contracts between players are more likely to ensure autonomy and independence. This affects the duration of the nomination of the regulators. Short-term contracts may be best, but contracts for regulators typically last four to eight years and are often renewable.

The empirical debate about the design of regulators' jobs is a possible source of tension. Practitioners typically recommend choosing regulators based on professional rather than political criteria, but that may not be the best way to minimize regulatory capture. Professional experts are likely to come from the sector they are supposed to regulate and are likely to return to it sooner or later (as typically happens in developing countries). On the other hand, elected regulators are unlikely to be much more independent than professional regulators; they will simply represent different interests.

Practitioners and theorists alike emphasize different sources of capture and agree that one way to deal with its risk is to make sure the selection process involves both executive and legislative branches.

This paper — a product of the Regulatory Reform and Private Enterprise Division, Economic Development Institute — is part of a larger effort in the institute to increase understanding of infrastructure regulation. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Gabriela Chenet-Smith, room G2-148, telephone 202-473-6370, fax 202-334-8350, Internet address gchenet@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Antonio Estache may be contacted at aestache@worldbank.org. (28 pages)

2074. Light and Lightning at the End of the Public Tunnel: Reform of the Electricity Sector in the Southern Cone

Antonio Estache and Martin Rodriguez-Pardina
(March 1999)

Competition, rather than privatization, is the key to transforming the electricity sector in Latin America's Southern Cone— and not just head-to-head competition. Competition for the market and against yardsticks are also important instruments for regulators.

Estache and Martin Rodriguez-Pardina provide an overview of recent privatization experiences in Argentina, Brazil, and Chile.

They focus on both achievements and outstanding problems in the electricity sector. They pay special attention to the issue of whether regulators can enforce compliance and sustain the spirit of reform — bringing the forces of competition to the sector — despite the unavoidable adjustments and fine-tuning that effective regulation requires.

Among the lessons: Competition, rather than privatization, is the key to transforming the sector. For competition to work, several conditions must be met:

1) The primary energy source must be competitive for competition in the wholesale market to work. (In Chile, the fact that most of the water rights have been allocated to the major generator company seriously limits efficiency in the sector.)

2) Monopolistic stages must be formally separate from other stages, with clear rules for third-party access. (Here, the structure adopted by Argentina seems superior to that adopted by Chile.)

3) New entry into the system is the ultimate test of competition. The main gain from competition in electricity generation comes from the decentralization of decisions about when, how much, and what type of generation has to be brought to the market, rather than from short-term gains from minimizing costs.

Overall, vertical and horizontal separation in the sector increases rather than reduces the burden and complexity of regulation. In a disintegrated system, the issues that arose in a traditional monopoly situation (fair rate of return, asset base, tariff to final consumers, and so on) are significantly increased. New issues include third-party access, the promotion of competition, interconnection pricing, and consistency of regulations across stages of competitive development.

Restructuring and privatization are still in their early stages so lessons drawn from experience must be considered tentative.

This paper — a product of the Regulatory Reform and Private Enterprise Division, Economic Development Institute — is part of a larger effort in the institute to increase understanding of infrastructure regulation. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Gabriela Chenet-Smith, room G2-148, telephone 202-473-6370, fax 202-334-8350, Internet address gchenet@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Antonio Estache may be contacted at aestache@worldbank.org. (22 pages)

2075. Between Group Inequality and Targeted Transfers

Quentin T. Wodon
(March 1999)

Two extensions to Yitzhaki and Lerman's group decomposition of the Gini index are derived and applied to data from Bangladesh to analyze how inequality is affected by education, occupation, and land ownership — and to estimate the impact of group-targeted transfers on the whole population.

Wodon provides two extensions to Yitzhaki and Lerman's group decomposition of the Gini index.

First, he analyzes stratification (within the group) and inequality (between groups) along several dimensions at once. This makes the determinants of inequality more understandable.

Second, he derives the impact on the Gini of marginal changes in income or consumption by group. This can be used to evaluate targeted redistributive policies or to assess the impact of exogenous shocks by group.

He applies the analysis to data from Bangladesh, with a focus on how inequality affects land ownership, education, and occupation.

Education appears to be a stronger determinant of inequality than occupation, with land ownership ranking third. Marginal targeted transfers and taxes have more effect on redistribution when applied to education (from the well-educated to the illiterate) or occupation groups (from officials and managers to tenants and agricultural workers).

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, South Asia Region — was written as part of background work for the Bangladesh poverty assessment. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jillian Badami, room MC10-336, telephone 202-458-0425, fax 202-522-2428, Internet address jbadami@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at qwodon@worldbank.org. (33 pages)

2076. Microdeterminants of Consumption, Poverty, Growth, and Inequality in Bangladesh

Quentin T. Wodon
(March 1999)

What are the gains from a better education, more land ownership, or a different occupation in Bangladesh? Do the gains differ in urban and rural areas? Have they remained stable over time? Do household size, family structure, and gender affect well-being? Do consumption, poverty, and inequality depend more on characteristics of households or on the areas in which those households are located?

Using household data from five successive national surveys, Wodon analyzes the microdeterminants of (and changes in) consumption, poverty, growth, and inequality in Bangladesh from 1983 to 1996.

Education, demographics, land ownership, occupation, and geographic location all affect consumption and poverty. The gains in per capita consumption associated with many of these household characteristics tend to be stable over time.

Returns to demographics (variables in household size) have the greatest impact on growth, perhaps because of improving employment opportunities for women.

Education (in urban areas) and land (in rural areas) contribute most to measures of between-group inequality. Location takes second place, in both urban and rural areas.

Wodon introduces the concept of conditional between-group inequality. Existing group decompositions of the Gini index along one variable do not control for other characteristics correlated with that variable. Conditional between-group Ginis avoid this pitfall. He also shows how to use unconditional and conditional between-group Ginis for simulating policies.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, South Asia Region — was written as part of background work for the Bangladesh poverty assessment. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jillian Badami, room MC10-336, telephone 202-458-0425, fax 202-522-2428, Internet address jbadami@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html.The author may be contacted at qwodon@worldbank.org. (33 pages)

2077. Change in the Perception of the Poverty Line during Times of Depression: Russia 1993–96

Branko Milanovic and Branko Jovanovic
(March 1999)

Russia experienced a precipitous drop in real income from March 1993 to September 1996. As the percentage of the "objectively" poor (those with income below the official poverty line) increased, the percentage of the "subjectively" poor (those who felt poor) decreased. Perception of the subjective poverty line went down even faster than real incomes.

During Russia's economic transition real income declined precipitously for most of the population. How were Russians' perceptions of the minimum income level needed to survive affected by such a rapid decline in their incomes?

Based on data collected from repeated surveys of individuals during the period from March 1993 to September 1996, Milanovic and Jovanovic find that the subjective estimate of that minimum income for an adult Russian decreased by about 1.7 percent each month.

This sharp reduction in the subjective poverty line meant that proportionately fewer people felt poor. However at all times at least 60 percent of the population considered itself poor.

In other words, the percentage of the "subjectively poor" tended to decline as the perception of the needed minimum was reduced. In this somewhat unusual situation, the percentage of the subjectively poor decreased more or less in step with a reduction in people's real income. Only larger-than-usual income decreases were needed to jolt the population — that is, to keep the percentage of the subjectively poor unchanged.

The percentage of the self-assessed poor was always lower than the percentage of the poor according to the "social" subjective poverty line. This suggests that pockets of the population regarded their own income as adequate although in the public perception they were poor.

This in turn suggests two mechanisms for adapting to worsening circumstances: 1) a reduction in what people perceive to be the minimum income needed for survival and 2) the existence in the population of pockets of people who demand even less than others.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to study the social effects of transition to a market economy. The study was funded by the Bank's Research Support Budget under research project "Changing Ideas about Poverty in Russia" (RPO 681-42). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Criselda Argayoso, room MC3-568, telephone 202-473-3592, fax 202-522-1153, Internet address cargayoso@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Branko Milanovic may be contacted at bmilanovic@worldbank.org. (32 pages)

2078. Valuing Mortality Reductions in India: A Study of Compensating-Wage Differentials

Nathalie B. Simon, Maureen L. Cropper, Anna Alberini, and Seema Arora
(March 1999)

Conducting cost-benefit analyses of health and safety regulations requires placing a dollar value on reductions in health risks, including the risk of death. Compensating-wage differentials, which are often used to estimate the value of risk reductions, suggest that compensation for the loss of a statistical life in Indian manufacturing would be between 6.4 million and 15 million in 1990 rupees (roughly \$150,000 to \$360,000).

Conducting cost-benefit analyses of health and safety regulations requires placing a dollar value on reductions in health risks, including the risk of death. In the United States, mortality risks are often valued using compensating-wage differentials. These differentials measure what a worker would have to be paid to accept a small increase in his risk of death — which is assumed to equal what the worker would pay to achieve a small reduction in his risk of death.

Simon, Cropper, Alberini, and Arora estimate compensating-wage differentials for risk of fatal and nonfatal injuries in India's manufacturing industry. They estimate a hedonic wage equation using the most recent Occupational Wage Survey, supplemented by data on occupational injuries from the Indian Labour Yearbook.

Their estimates of compensating-wage differentials imply a value of statistical life (VSL) in India of 6.4 million to 15 million 1990 rupees (roughly $150,000 to $360,000 at current exchange rates). This number is between 20 and 48 times forgone earnings — the human capital measure of the value of reducing the risk of death.

The ratio of the VSL to forgone earnings implied by the study is larger than in comparable U.S. studies but smaller than the ratio implied by the only other compensating-wage study for India (Shanmugam 1997). The latter implies a ratio of VSL to forgone earnings of 73!

The authors caution that in India, as in the United States, compensating-wage differentials in the labor market may overstate what individuals would themselves pay to reduce the risk of death. They suggest using their estimates as an upper bound on willingness to pay to reduce risk of death, and forgone earnings as a lower bound.

This paper — a product of Infrastructure and Environment, Development Research Group — is part of a larger effort in the group to promote the use of benefit-cost analysis in evaluating environmental programs. The study was funded by the Bank's Research Support Budget under research project "Valuing Mortality Reductions in India: A Study of Compensating Wage Differentials" (RPO 680-84). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tourya Tourougui, room MC2-521, telephone 202-458-7431, fax 202-522-3230, Internet addresstttourougui@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at mcropper@worldbank.org. (28 pages).

2079. Is More Targeting Consistent With Less Spending?

Martin Ravallion
(March 1999)

Concern about how cuts in public spending affect the poor has led to recommendations that cuts be combined with better targeting to the poor. That should not be difficult if there is broad political support for protecting the poor from cuts. But is it possible to target more, while spending less, when the political support of the nonpoor is crucial — and cannot be counted on?

Economists often advise governments to target their spending better when cuts are called for. Ravallion asks whether that advice is consistent with a political economy constraint that limits the welfare losses to the nonpoor from spending cuts.

A simple theoretical model shows that the answer is unclear on a priori grounds and so will depend on the specifics of program design and financing.

A case study for a World Bank-supported social program in Argentina illustrates how cuts can come with worse targeting performance: The allocation to the poor falls faster than that to the nonpoor.

Ravallion draws some lessons for how the poor might be better protected from cuts.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to better understand how the benefits from public spending are distributed. The study was funded by the Bank's Research Support Budget under research project "Policies for Poor Areas" (RPO 681-39). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at mravallion@worldbank.org. (18 pages)

2080. Monitoring Targeting Performance When Decentralized Allocations to the Poor Are Unobserved

Martin Ravallion
(March 1999)

Program funding and design choices by the central government can greatly affect the targeting performance of decentralized social programs. The allocation to a province should depend on how successful it is at reaching the poor with the extra resources, rather than how poor it is. New measurement tools can help monitor performance with limited data.

National antipoverty programs often rely heavily on provincial governments. The center targets poor provinces in the hope that they will reach their own poor. Without successful intraprovincial targeting, however, even dramatic redistribution from rich to poor provinces can have little impact on poverty nationally.

However, data for assessing performance at provincial level are often far from ideal. Can a centralized government monitor the performance of decentralized social programs in reaching the poor when their benefit incidence is unobserved?

Ravallion shows that the poverty map and the corresponding spending allocation across geographic areas allow one to identify the latent differences in mean allocations to the poor versus the nonpoor. The national measure of targeting performance is also subgroup-decomposable.

Ravallion uses an application to an antipoverty program in Argentina (Trabajar II) to assess performance in reaching the poor and to measure the relative contributions to the program's performance — before and after reforms — of the center's provincial reallocation and decentralized targeting.

Funding and program design changes led to large gains for the poor, although with diverse performance across provinces.

Program funding and design choices by the central government can greatly affect the targeting performance of decentralized social programs. The allocation to a province should depend on how successful it is at reaching the poor with the extra resources, rather than how poor it is.

Design choices should provide incentives for provincial governments to target resources to the poor. Finding feasible ways to monitor their performance and adjust central government's efforts accordingly are then crucial to better outcomes for poor people.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to provide better tools for monitoring the impact on poverty of World Bank projects. The study was funded by the Bank's Research Support Budget under research project "Policies for Poor Areas" (RPO 681-39). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at mravallion@worldbank.org. (25 pages)

2081. Reforming Côte d'Ivoire's Cocoa Marketing and Pricing System

John McIntire and Panos Varangis
(March 1999)

Fully liberalizing Côte d'Ivoire's export marketing system is expected to improve producers' incomes and marketing efficiency. And the benefits from liberalization should outweigh the costs from eliminating fixed producer prices and public forward sales.

Côte d'Ivoire has historically taxed cocoa producers. Market reforms over the past 10 years have somewhat succeeded in making domestic and foreign marketing more transparent and competitive. But they have not done much to raise producer prices in real terms or as a share of the FOB (free on board) price. Maintaining fixed producer prices and marketing costs and margins has encouraged rent-seeking and led to efficiency losses.

New reforms will fully liberalize the country's export marketing system by eliminating public management of exports. This means the end of mandatory export authorization, of public forward sales, and of fixed minimum producer prices and marketing margins.

The new reform is expected to improve producers' incomes.

McIntire and Varangis find that the benefits from the new reform (in terms of lower implicit taxes, lower marketing costs and margins, and higher producer prices) will outweigh the costs from eliminating public forward sales and fixed producer prices.

Results from a general equilibrium model indicate that reducing export taxes would have a small negative effect on aggregate income but would improve income distribution for poorer rural areas.

The fact that Côte d'Ivoire has market power in the world cocoa market justifies a higher optimal export tax than the current one. But raising export taxes may eventually reduce its market share and worsen income distribution, at the expense of the poorer rural sector.

This paper — a joint product of the Abidjan Resident Mission and Rural Development, Development Research Group — is part of a larger effort in the Bank to evaluate the results of marketing and pricing reforms in producing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-547, telephone 202-473-3716, fax 202-522-1151, Internet address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at jmcintire@worldbank.org or pvarangis@worldbank.org. (26 pages)

2082. Gross Worker and Job Flows in a Transition Economy: An Analysis of Estonia

John C. Haltiwanger and Milan Vodopivec
(March 1999)

Estonia shows that intense restructuring after the opening of product and labor markets need not lead to massive increases in unemployment. The evidence suggests that flexibility in the labor market is vital in a transition's success, especially in a country undergoing rapid reform.

With the transition in Estonia, worker flows increased greatly, driven by an increase in job flows. As the situation stabilized, the job and worker flows converged at rates similar to those observed in Western economies.

In 1989, job reallocation accounted for only a small fraction of overall worker reallocation, which was less than 15 percent. By 1993, the worker reallocation rate exceeded 35 percent, more than two-thirds of it attributable to job reallocation.

The dramatic increase in job flows was the result of increased separations, as jobs were eliminated. In 1992, early in the transition, the situation looked ominous but in only a couple of years new jobs and hires surged as well. By 1994, the hiring rate exceeded the separation rate, and jobs were being created faster than they were being eliminated.

Increased job and worker reallocations did not affect all sectors or types of employee the same way. More jobs were eliminated in large state manufacturing firms and more jobs were created by smaller, private service and trade-oriented employers. Virtually all of the new jobs came from the private sector (although many jobs were eliminated there, too).

The elimination of so many jobs accounted for about half the increase in direct job-to-job transitions (from less than 5 percent in 1989 to 15 percent in 1994).

Opening product and labor markets in Estonia led to a remarkable surge in worker and job flows. Early in the transition so many jobs were eliminated that things looked ominous, but within a couple years small private firms led the surge in new jobs and hiring.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to investigate labor markets. The study was funded by the Bank's Research Support Budget under research project "Labor Market Adjustment in Estonia" (RPO 679-71). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sheila Fallon, room MC3-638, telephone 202-473-8009, fax 202-522-1153, Internet address sfallon@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Milan Vodopivec may be contacted at mvodopivec@worldbank.org. (67 pages)

2083. INFRISK: A Computer Simulation Approach to Risk Management in Infrastructure Project Finance Transactions

Mansoor Dailami, Ilya Lipkovich,
and John Van Dyck
(March 1999)

Increased exposure to risk has been an inevitable consequence of recent economic, technological, and financial changes, the defining themes of the 1990s. In the face of such developments, the viability of long-term capital investments—particularly in the core infrastructure sectors of power, transport, and telecommunications — hinges critically on how the risks associated with such investments are evaluated and managed.

Few issues in modern finance have inspired the interest of both practitioners and theoreticians more than risk evaluation and management. The basic principle governing risk management in an infrastructure project finance deal is intuitive and well-articulated: allocate project-specific risks to parties best able to bear them (taking into account each party's appetite for, and aversion to, risk); control performance risk through incentives; and use market hedging instruments (derivatives) for covering marketwide risks arising from fluctuations in, for instance, interest and exchange rates, among other things.

In practice, however, governments have been asked to provide guarantees for various kinds of projects, often at no charge, because of problems associated with market imperfections:

- Derivative markets (swaps, forwards) for currency and interest-rate risk hedging either do not exist or are inadequately developed in most developing countries.
- Limited contracting possibilities (because of problems with credibility or enforcement).
- Differing methods for risk measurement and evaluation.

Two factors distinguish the financing of infrastructure projects from corporate and traditional limited-recourse project finance: 1) a high concentration of project risk early in the project life cycle (precompletion), and 2) a risk profile that changes as the project comes to fruition, with a relatively stable cash flow subject to market and regulatory risk once the project is completed.

Dailami, Lipkovich, and Van Dyck introduce INFRISK, a computer-based risk-management approach to infrastructure project finance transactions that involve the private sector. Developed in-house in the Economic Development Institute of the World Bank, INFRISK is a guide to practitioners in the field and a training tool for raising awareness and improving expertise in the application of modern risk management techniques.

INFRISK can analyze a project's exposure to a variety of market, credit, and performance risks from the perspective of key contracting parties (project promoter, creditor, and government). Their model is driven by the concept of the project's economic viability.

Drawing on recent developments in the literature on project evaluation under uncertainty, INFRISK generates probability distributions for key decision variables, such as a project's net present value, internal rate of return, or capacity to service its debt on time during the life of the project.

Computationally, INFRISK works in conjunction with Microsoft Excel and supports both the construction and the operation phases of a capital investment project. For a particular risk variable of interest (such as the revenue stream, operations and maintenance costs, and construction costs, among others) the program first generates a stream of probability distributions for each year of a project's life through a Monte Carlo simulation technique. One of the key contributions made by INFRISK is to enable the use of a broader set of probability distributions (uniform, normal, beta, and lognormal) in conducting Monte Carlo simulations rather than relying only on the commonly used normal distribution. A user's guide provides instruction on the use of the package.

This paper — a product of the Regulatory Reform and Private Enterprise Division, Economic Development Institute — is part of a larger effort in the institute to address the training needs of Bank client countries as well as support the Bank's own lending and advisory services in promoting infrastructure development and modernization in developing countries. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Bill Nedrow, room G2-072, telephone 202-473-1585, fax 202-334-8350, Internet address wnedrow@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at mdailami@worldbank.org, ilipkovich@worldbank.org, or jvandyck@worldbank.org. (33 pages)

2084. Future Inequality in Carbon Dioxide Emissions and the Projected Impact of Abatement Proposals

Mark T. Heil and Quentin T. Wodon
(March 1999)

Under business-as-usual projections to the year 2100, inequality in per capita carbon emissions is likely to decline — but slowly. Targeted reductions should be effective in reducing not only total emissions but emissions inequality.

Heil and Wodon analyze inequality in future carbon emissions using a group decomposition of the Gini index.

Business-as-usual projections to the year 2100 for 135 countries show inequality in per capita emissions declining, but slowly.

They also measure the impact on emissions levels and inequality of the Kyoto Protocol and other abatement proposals for Annex II (non-Eastern European high income) countries in 2010, focusing on the their gap-narrowing and reranking effects.

Per capita emissions of Annex II and non-Annex II countries will probably not be substantially reranked unless the Annex II countries reduce their emissions by at least half (from 1990 levels) and emissions from non-Annex II countries continue growing unabated.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Latin America and Caribbean Region — is part of a larger effort in the region to analyze the implications of economic growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Carlos Anguizola, room I8-104, telephone 202-473-9230, fax 202-522-0054, Internet address canguizola@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at qwodon@worldbank.org. (24 pages)

2085. Monitoring Banking Sector Fragility: A Multivariate Logit Approach with an Application to the 1996–97 Banking Crises

Asli Demirgüç-Kunt
and Enrica Detragiache
(March 1999)

A multivariate logit empirical model of banking crisis probabilities can be useful for monitoring fragility in the banking sector.

Demirgüç-Kunt and Detragiache explore how a multivariate logit empirical model of banking crisis probabilities can be used to monitor fragility in the banking sector.

The proposed approach relies on readily available data, and the fragility assessment has a clear interpretation based on in-sample statistics. Also, the monitoring system can be tailored to fit the preferences of the decisionmakers, and the model has better in-sample performance than currently available alternatives.

Despite these advantages, the monitoring system would have missed the 1997 banking crises in Indonesia, Malaysia, and the Republic of Korea, while it would have detected some weakness in Thailand and the Philippines. It would have clearly foreseen the 1996 crisis in Jamaica.

Aggregate variables can convey information about general economic conditions often associated with fragility in the banking sector but are silent about the situation at individual banks or in specific segments of the banking sector — so crises that may develop from specific weaknesses in some market segments and spread through contagion would not be detected.

The econometric study of systemic banking crises is a relatively new field of study. The development and evaluation of monitoring and forecasting tools based on the results of studies such as this are at an embryonic stage at best.

Demirgüç-Kunt and Detragiache highlight elements that need to be evaluated in developing "ready-to-use" procedures for decisionmakers and explore possible avenues for doing so.

The monitoring system must be designed to fit the needs of policymakers, so systems must be developed as part of an interactive process involving both econometricians and decisionmakers.

This paper — a product of Finance, Development Research Group — is part of a larger effort in the group to understand banking crises. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kari Labrie, room MC3-456, telephone 202-473-1001, fax 202-522-1155, Internet address klabrie@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html.The authors may be contacted at ademirguckunt@worldbank.org or edetragiache@imf.org. (45 pages)

2086. Deregulating Technology Transfer in Agriculture: Reform's Impact on Turkey in the 1980s

David Gisselquist and Carl Pray
(March 1999)

Liberalizing the regulation and welcoming the private delivery of inputs and technology greatly increased the private transfer of technology to Turkish farmers. Regulatory reform in Turkey allowed private firms to increase their share of input markets and allowed farmers to significantly increase yields and production.

Turkey is one of a handful of developing countries that have liberalized regulation of agricultural inputs and welcomed private firms delivering technology and inputs. Gisselquist and Pray show that Turkish regulatory reform affecting seeds and other inputs in the 1980s:

- Greatly increased private technology transfer into Turkey.
- Encouraged market entry for more foreign and domestic companies involved in production and trade in Turkey.
- Allowed private firms to increase their share of input markets.
- Where inputs brought new technology, allowed farmers to significantly increase yields and production.

Gisselquist and Pray recommend that the World Bank and other donors involved with agriculture pay more attention to the regulation of inputs in developing countries. They also recommend that developing country governments revise regulations to leave choices about technology performance to farmers and markets — and to focus instead on externalities, removing unnecessary obstacles to private technology transfer through the production and trade of inputs.

Other countries that have similarly reformed the regulation of agricultural inputs include Chile (in the 1970s), Bangladesh and India (at the end of the 1980s), Malawi (in 1995–96), and Romania (in 1997).

This paper — a product of Trade, Development Research Group — is one of four country case studies of regulatory reform for agricultural inputs. Other studies examine the impact of regulatory reform in Bangladesh, India, and Zimbabwe (where reform was partial). This study was funded by the Bank's Research Support Budget under research project "Regulating Technology Transfer: Impact on Technical Change, Productivity, and Incomes. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. David Gisselquist may be contacted at dgisselquist@worldbank.org. (57 pages).

2087. Male-Female Differences in Labor Market Outcomes during the Early Transition to Market: The Case of Estonia and Slovenia

Peter F. Orazem and Milan Vodopivec
(March 1999)

Estonia adopted liberal labor market policies during the transition, and Slovenia took an interventionist approach. Even so, relative wages for women rose in both countries. Women were less mobile across jobs in both countries, so men disproportionately filled new jobs in expanding sectors.

Orazem and Vodopivec analyze changes in women's relative wages, using social security data from Slovenia (1987–92) and a retrospective survey of Estonia's labor force (1989–94).

Estonia adopted liberal labor market policies. Slovenia took an interventionist approach. Nevertheless, relative wages for women rose in both countries. Actually, real wages fell for both men and women, but women lost less than men did.

Certain factors favored women:

• Returns to human capital rose during the transition.

• Relative labor demand shifted toward predominantly female sectors (health, education, financial services, retail trade) and away from traditionally male sectors (agriculture, manufacturing, mining, transportation).

• Women with low wages had a disproportionate incentive to exit the labor market, especially in Estonia.

Women were less mobile across jobs in both countries, however, so men disproportionately filled new jobs in expanding sectors. Women who remained employed had higher average education levels. Women's relative immobility will tend to reduce their early relative gains. Their relative wages will also continue to fall if their share of the expanding sectors continues to fall.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to investigate gender outcomes in transition economies. The study was funded by the Bank's Research Support Budget under research project "Labor Market Adjustment in Estonia" (RPO 679-71). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sheila Fallon, room MC3-638, telephone 202-473-8009, fax 202-522-1153, Internet address sfallon@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Milan Vodopivec may be contacted at mvodopivec@worldbank.org. (41 pages)

2088. Expropriation of Minority Shareholders: Evidence from East Asia

Stijn Claessens, Simeon Djankov,
Joseph P. H. Fan, and Larry H. P. Lang
(March 1999)

In nine East Asian countries, higher cash-flow rights are associated with a higher market valuation and higher control rights with a lower valuation, especially when cash-flow rights are low and control rights are high. This suggests the expropriation of minority shareholders by controlling shareholders. The risk of expropriation is the chief principal-agent problem for large publicly traded corporations.

As many East Asian countries plunged into economic decline, the structure of concentrated ownership and associated corporate governance, along with weak corporate performance, have been blamed for the crisis. There is little empirical evidence, however, of the nature of ownership structures in East Asia and their relationship to corporate performance in the typical East Asian environment (where inefficient judicial systems, and weak property and shareholder rights are common).

Claessens, Djankov, Fan, and Lang examine evidence of the expropriation of minority shareholders for 2,658 corporations in nine East Asian countries in 1996. They distinguish control from cash-flow rights. They also distinguish between various types of ultimate owners, including family, state, widely held corporations, and widely held financial institutions.

Higher cash-flow rights are associated with higher market values, consistent with Jensen and Meckling (1976).

In contrast, deviations of control from cash-flow rights — through the use of dual-class shares, pyramiding, and cross-holdings — are associated with lower market values. This is especially true for corporations under family control and, in Japan, under the control of widely held financial institutions.

They conclude that the risk of expropriation is the major principal-agent problem for large corporations, as suggested by La Porta and colleagues (1999).

The degree to which certain ownership structures are associated with expropriation depends on country-specific circumstances. These may include the quality of banking systems, the legal and judicial protection of individual shareholders, and the degree of financial disclosure required.

This paper — a product of the Financial Economics Unit, Financial Operations Vice Presidency — is part of a larger effort in the vice presidency to study corporate performance patterns in East Asia. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC10-628, telephone 202-473-3722, fax 202-522-2031, Internet address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at cclaessens@worldbank.org or sdjankov@worldbank.org. (33 pages)

2089. Corporate Diversification in East Asia: The Role of Ultimate Ownership and Group Affiliation

Stijn Claessens, Simeon Djankov,
Joseph P. H. Fan, and Larry H. P. Lang
(March 1999)

Some East Asian firms diversify to circumvent external factor markets subject to high transaction costs. Other diversify as a means of expropriation by large stockholders. There is evidence that group affiliation is used to complement firm-level diversification in the creation of internal markets.

Using data for more than 2,000 companies from nine East Asian economies, Claessens, Djankov, Fan, and Lang examine the interactions between ultimate ownership, group affiliation, and corporate diversification.

They find evidence that allocating resources within business groups is associated with higher market valuation when external markets are less developed.

They also find that group affiliation and firm-level diversification are used complementarily to exploit the relative cost-effectiveness of internal markets.

They reject the hypothesis that diversification patterns can be explained by large blockholders' incentive to reduce risk. But they find support for the hypothesis that controlling owners use diversification to expropriate other shareholders.

Group affiliation is widespread among publicly traded corporations in East Asia. Group-affiliated firms are on average associated with diversification discounts. Further analysis reveals that the discounts are attributable to diversified firms in the more developed East Asian economies. By contrast, group affiliation positively contributes to diversification performance in less developed economies.

The authors find that group-affiliated firms are more likely to diversify in developing economies but are equally likely to diversify in developed economies. When diversifying in more developed economies, group-affiliated firms destroy more value than do independent firms. In developing economies, group-affiliated firms are more likely than independent firms to benefit from diversification in developing economies.

This paper — a product of the Financial Economics Unit, Financial Operations Vice Presidency — is part of a larger effort in the vice presidency to study corporate performance patterns in East Asia. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC10-628, telephone 202-473-3722, fax 202-522-2031, Internet address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at cclaessens@worldbank.org or sdjankov@worldbank.org. (30 pages)

2090. Risks, Lessons Learned, and Secondary Markets for Greenhouse Gas Reductions

Donald F. Larson and Paul Parks
(March 1999)

Emissions trading could significantly reduce the costs of limits on greenhouse gas emissions. Complementary domestic policies to reduce fragmentation in evolving secondary markets, establish clear baselines and procedures, and strengthen host-country institutions could further reduce the risks and costs of emission limits.

Collectively or individually, countries are likely to implement policies designed to limit greenhouse gas emissions. Experience from tradable quota schemes suggests that emissions trading could significantly reduce the costs of emission limits.

The Kyoto Protocol provides the framework for a common trading mechanism for all countries — including countries that would not face immediate emission limits. Significantly, the Protocol places the responsibility for meeting emission limits with national governments.

How policymakers choose to implement emission limits will significantly shape the incentives that drive evolving secondary markets for greenhouse-gas-based instruments. Potential market participants who were surveyed rate policy-related risk as higher than business-related risks.

Domestic policies designed to reduce fragmentation in secondary markets, establish clear baselines and procedures, and strengthen host-country institutions can all help reduce the risks and costs of emission limits.

This paper — a product of the Development Research Group — is part of a larger effort in the group to support more cost-effective environmental regulations. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-544, telephone 202-473-3716, fax 202-522-1150, Internet address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Donald Larson may be contacted at dlarson@worldbank.org. (54 pages)

2091. Beyond Unequal Development: An Overview

Andrés Solimano
(March 1999)

Development theory from the 1940s through the 1960s emphasized market failures, discontinuities, irreversibilities, and excessive social inequality. In the 1980s and 1990s the emphasis shifted to economic growth supported by the trinity of stabilization, liberalization, and privatization. But increasing problems of social inequality hamper economic growth and the sustainability of development. It is time, says Solimano, to rethink the development paradigm.

In the 1980s and 1990s, economic growth (material progress) became the main development goal under the policies known as the "Washington Consensus." Earlier concerns about inequalities of income and wealth were replaced by policies emphasizing macroeconomic stabilization (reducing inflation and cutting fiscal deficits) and structural reform (trade liberalization, financial deregulation, privatization, and a shift to a smaller state). But fiscal adjustment and market liberalization alone have not brought stable, equitable development. Inequality of income and wealth, far from declining, seem to have increased in Latin America.

The "Washington Consensus" has supported social policies that rely on targeting, growth-led poverty reduction, and delivery of social services partly through the private sector. Loose ends to this strategy include:

- Growth patterns that favor skilled labor and nonlabor factors of production.
- The exclusion of vulnerable groups for whom the market produces little income.
- Overreliance on commodity-based growth for human development.
- Political manipulation of beneficiaries and weak institutional ability to reach targeted groups.
- Higher quality services provided by the private sector to high-income and upper-middle-class groups and lower quality services provided by the state to lower-income groups.

Social policies in developing countries in the past decade have been defined largely in terms of poverty reduction. Solimano argues that income distribution and the reduction of social inequality are valid policy targets on their own. Empirical evidence and theories of endogenous growth emphasize complementarities between social equity and growth. To the extent that social inequality engenders social conflict, invites taxation of physical investments, and induces economic populism, it hampers economic growth. Social policies to promote equitable development should include:

- Good, broad-based education and health services.
- Greater access to credit by low-income households and small-scale producers.
- More equal access to land and ownership of capital stock (say, after privatization).

Social safety nets are needed when unemployment, wage cuts, and declining income threaten the poor. Austerity policies without such safety nets as emergency employment programs, food distribution to children, and minimum income support schemes unduly hurt the poor, the vulnerable, and the politically weak, making fiscal retrenchment difficult and socially regressive.

This paper — a product of the Colombia, Ecuador, Venezuela Country Management Unit, Latin America and Caribbean Region — will appear in Andrés Solimano, Eduardo Aninat, and Nancy Birdsall, eds., *Distributive Justice and Economic Development* (University of Michigan Press, 1999, forthcoming). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Andrés Solimano, room I4-051, telephone 202-458-7671, fax

202-676-0720, Internet address asolimano @worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. (32 pages)

2092. What Does Aid to Africa Finance?

Shantayanan Devarajan, Andrew Sunil Rajkumar, and Vinaya Swaroop
(March 1999)

The development community seems to have swung from a denial that aid is fungible to a belief that all aid is fungible. The facts seem to indicate that aid to Africa is partly fungible. Donors should therefore be concerned about the quality of public spending programs in recipient countries.

If a donor gives aid for a project that the recipient government would have undertaken anyway, the aid finances expenditures other than the intended project. The notion that aid in this sense may be "fungible" has recently received empirical support.

Devarajan, Rajkumar, and Swaroop look at why aid is fungible or nonfungible, and the extent to which it is fungible in Sub-Saharan Africa.

Their results suggest that aid may be partially fungible in Africa and suggest some reasons.

They find relatively little evidence that aid leads to greater tax relief in Africa. Every dollar of aid leads to a 90-cent increase in government spending.

The implications of this result are by no means clear. If the marginal cost of taxation is exceptionally high — which it might be in African countries — using aid for tax relief may be the best use of foreign resources.

Aid's effect on the composition of current and capital spending? They increase equally. Even if all aid were intended to finance capital spending, the reallocation to current spending might not necessarily be harmful.

The fungibility of loans to specific sectors generally mirrors patterns found in a broader sample of countries.

Aid to energy, transport, and communication sectors increases public spending in those sectors somewhat but by no means one for one. (By contrast, in the worldwide sample, aid to transport and communications was almost fully nonfungible.)

Aid to the education sector — which had no discernible effect on education spending in the global sample — had an almost one-for-one effect on education spending in Africa.

Even in these partially fungible sectors, governments spend more out of aid resources than they do out of their own resources, at the margin. Governments do not spend all sectoral aid in that sector — nor do they treat such aid as merely budgetary support.

The more donors to a country, the more likely aid is to be fungible. If the number of donors represents a proxy for monitoring costs, it is not surprising that most aid is partly fungible.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to study the effects of aid as public expenditure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, Internet address cbernardo@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Shantayanan Devarajan may be contacted at sdevarajan @worldbank.org. (34 pages)

2093. Free Entry in Infrastructure

David Ehrhardt and Rebecca Burdon
(March 1999)

In most countries, a single firm has a legal monopoly on the supply of water, electricity, and sanitation in any given area. No one else is allowed to supply such services. Why do such rules exist? Do they make sense, or would it be better to allow anyone who wished to supply these services?

With a policy of free entry, individuals, firms, or community groups who wish to supply power, water, and sanitation services can do so with minimal legal restrictions. Free entry is the opposite of "exclusivity" or "legal monopoly."

Free entry is allowed in most industries, but governments usually allow only one provider of power, water, and sanitation in any given area. This is supposed to prevent wasteful duplication and ensure a supply of essential services to poor and marginal areas.

But monopoly water and power utilities often operate at high cost, lack funds to invest, and provide low-quality, unreliable service. Worse, poor and marginal areas are often unserved.

When the monopoly model doesn't work, it is time to look at alternatives. Ehrhardt and Burdon provide examples of alternative solutions in developing countries:

- In Karachi, Pakistan, the Orangi Pilot Project provides sanitation in an unplanned settlement. Roughly 800,000 working class people lived in an area where sanitary conditions were medieval and a long-hoped-for sewerage system never came. Starting in 1980, a charitable group developed a low-cost approach to piped sanitation, explained the technology to the community, and catalyzed community action. Householders and neighborhoods funded the construction of household pourflush latrines and sewerage lines.
- In Paraguay, 300 to 400 private individuals and *aguateros* supply good quality piped water to areas unserved by the public water company. Unlike the public company, the *aguateros* allow payment of connection fees on installment, making it easier for low-income consumers to connect.
- In Yemen, small-scale electricity providers innovatively meet the rural and village demand for electricity that the public utility does not meet.

These entrants seldom duplicate investments, although some government intervention to ensure interconnection could improve efficiency. Limitations on entry may sometimes be justified for environmental reasons or to promote private sector investment, but those cases are rare.

Legalizing alternative providers will allow them to expand and meet new needs. Limits on their entry may be needed sometimes, but limits should be the exception, not the rule, argue Ehrhardt and Burdon. Generally, free entry should be allowed in power, water, and sanitation.

This paper — a product of Private Participation in Infrastructure, Private Sector Development Department — is part of a larger effort in the department to analyze issues relating to private participation in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rosario Bartolome, room Q7-176 , telephone 202-473-5703, fax 202-522-3481, Internet address rbartolome@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at davide@cujamaica.com or rebecca @londecon.co.uk. (91 pages)

2094. What Triggers Market Jitters? A Chronicle of the Asian Crisis

Graciela L. Kaminsky and Sergio L. Schmukler
(April 1999)

Movements in stock prices in East Asia during the crisis in 1997–98 were triggered by both local and neighbor-country news. Having the highest impact was news about agreements with international organizations and credit rating agencies. But some changes seem to have been driven by herd instincts in the market itself, including overreactions to bad news.

In the chaotic financial environment of East Asia in 1997–98, daily changes in stock prices of as much as 10 percent became commonplace. Kaminsky and Schmukler analyze what type of news moved the market in those days of extreme market jitters.

They find that movements are triggered by both local and neighbor-country news. News about agreements with international organizations and credit rating agencies have the most weight.

Some of those large changes in stock prices, however, cannot be explained by any apparent substantial news but seem to be driven by herd instincts in the market itself.

On average, the one-day market rallies are sustained while the largest one-day losses are recovered — suggesting that investors overreact to bad news.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to understand financial markets and financial crises. The study was funded by the Bank's Research Support Budget under research project "Capital Market Crises and Information" (RPO 682-26). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sandra Holt, room I8-122, telephone 202-473-7859, fax 202-522-2119, Internet address sholt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Sergio Schmukler may be contacted at sschmukler@worldbank.org. (39 pages)

2095. Ten Years of Post-Socialist Transition Lessons for Policy Reform

Grzegorz W. Kolodko
(April 1999)

It is naive to assume that a market economy can be introduced by "shock therapy." A market economy requires adequate institutions and appropriate behavior, both of which can be introduced only gradually because they require new organizations, new laws, and changes in behavior of various economic entities.

It is naive to believe that a market economy can be introduced by "shock therapy," Kolodko argues. In the several cases when it has been attempted, it has brought problems. A market economy requires adequate institutions and appropriate behavior, both of which can be introduced only gradually because they require new organizations, new laws, and changes in behavior of various economic entities.

In 1989 influential financial organizations, political bodies, and professional economists seemed to agree — the so-called Washington consensus — on the main points of economic policy reform. Although the economic policies underlying that consensus were developed with no concern for post-socialist transformation, they have significantly influenced economic thought and action in Eastern Europe and the countries of the former Soviet Union.

And because those policies were not designed for the overhaul of post-socialist economies, they have failed, especially since they have not yet brought sustainable growth.

A new post–Washington consensus is developing, based on lessons from experience so far. Post-socialist occurrences are also contributing to development policy reorientation. Among realities policymakers must recognize:

- Above all, appropriate institutional arrangements are needed for growth.
- Institution-building by its very nature must be gradual.
- The size of government is less important than the quality of government policy and how the government changes.
- If the formation of institutions is left to spontaneous forces unleashed by liberalized markets, the vacuum will be filled by informal institutions.
- The judiciary system must be transformed to serve the market economy.
- Deregulating the post-socialist economy requires shifting competence and power from central to local governments.
- The development of nongovernmental organizations must be accelerated.
- Government concern about equitable growth and income policy is important during the transition.
- With the support of international financial institutions, countries must monitor and control short-term capital liberalization.
- The Bretton Woods organizations should reconsider their policies toward transition economies — and should especially provide more support for institution-building and equitable growth.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to study the policy reforms for sustainable development and the role of institutional arrangements in managing transition to a market economy. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jennifer Prochnow-Walker, room MC3-378, telephone 202-473-7466, fax 202-522-1152, Internet address jprochnow@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at gkolodko@imf.org. (29 pages)

2096. Reforming the Urban Transport Sector in the Rio de Janeiro Metropolitan Region: A Case Study in Concessions

Jorge M. Rebelo
(April 1999)

In a bold effort to privatize Rio de Janeiro's urban transport sector, the state government showed that political decisiveness, *transparency, and ingenuity in developing incentives are crucial to make loss-making operations attractive to the private sector. It also learned that not having a credible staff redundancy program might seriously undermine the benefits expected from concessions.*

Rebelo describes a bold effort by the state government to increase private sector participation in Rio de Janeiro's urban transport sector, reduce heavy operating subsidies, and establish a foundation for making the sector sustainable.

This effort was undertaken with the help of three World Bank–financed loans:

- The Rio de Janeiro Metropolitan Transport loan, which provided assistance for the transfer of federally owned suburban railways to the state government.
- The Rio de Janeiro State Reform and Privatization Loan, which helped the state privatize and grant concessions for a number of its enterprises.
- The Rio de Janeiro Mass Transit Loan, which supported the reorganization of the sector and the concession of the Rio suburban railways (Flumitrens).

Most of the reforms in the urban transport sector have been implemented.

The lessons learned from implementation and the results obtained so far suggest that political decisiveness, transparency, and ingenuity in developing incentives are crucial to privatizing urban rail transport systems.

But the state also learned that not having a credible staff redundancy program might seriously reduce the benefits expected from concessions.

This paper — a product of the Transport and Urban Unit, Finance, Private Sector, and Infrastructure Department, Latin America and the Caribbean Region — is part of a larger effort in the region to help borrowers concession loss-making urban transport operations to the private sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Allison Turner, room I5-005, telephone 202-473-0933, fax 202-676-9594, Internet address aturner@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at jrebelo@worldbank.org. (24 pages)

2097. The Theory of Access Pricing: An Overview for Infrastructure Regulators

Tommaso M. Valletti and Antonio Estache
(April 1999)

Failure to properly design access rules is a key reason the potential gains from restructuring essential network facilities are not maximized or shared fairly between facility users and owners. This survey provides policymakers and regulators with an overview of relevant theory on access pricing, to solidly ground the practical debate.

An important component of policies to promote effective competition among all segments of network industries (such as electricity, telecommunications, or railways) is a regulatory environment guaranteeing that competitors have access to the services of potential "bottleneck" facilities too costly to duplicate. Rules covering fair access to these facilities — including fair access prices — generally improve economic efficiency by easing competition in markets both upstream and downstream from the bottleneck.

Appropriate access pricing rules are especially needed when a dominant firm controls the supply of one or more inputs — for example, gas transportation, electricity transmission, local telecommunications access, or railway track — vital for its competitors.

Access pricing is part of the antitrust concern central to the so-called essential facilities doctrine covered by U.S. legislation. It is also related broadly to such competition policy issues as quantity discounts, cross-subsidies, tie-ins, refusals to deal or unbundle, exclusive dealing, and predatory pricing.

Access pricing is one of the most important and controversial questions in regulating infrastructure services. This complexity stems partly from the practical fact that access rules can be discussed only with reference to the rest of the regulatory environment, since regulators have many goals and constraints.

In their survey of access pricing, Valletti and Estache try to make it clear that access rules should not be assigned too many expectations. There are a few things access prices already do, however, and should continue doing until an all-encompassing solution comes along.

Their survey covers access rules for both vertically unbundled and vertically integrated industries. It addresses the question: what happens if access is left unregulated? And it discusses the main challenges to implementation: calculating and allocating costs, finding a usage-based solution to the access pricing problem (the global price cap), and monitoring anticompetitive behavior (partial caps or adjusted global caps).

This paper — a product of the Governance, Regulation, and Finance Division, World Bank Institute — is part of a larger effort in the institute to disseminate best practice and best theory in the regulation of infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Grace Chenet-Smith, room G2-148, telephone 202-473-6370, fax 202-334-8350, Internet address gchenet@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at t.valletti@lse.ac.uk or aestache@worldbank.org. (31 pages)

2098. Reconsidering the Evidence on Returns to T&V Extension in Kenya

Madhur Gautam and Jock R. Anderson
(April 1999)

The sensitivity of empirical results to potential data errors and model misspecification can yield misleading policy implications and investment signals. A widely disseminated study of the impact of the training and visit (T&V) system of management for extension services in Kenya is a striking example of how innocuous data errors and alternative specifications lead to strikingly different results.

Gautam and Anderson revisit the widely disseminated results of a study (Bindlish and Evenson 1993, 1997) of the impact of the training and visit (T&V) system of management for public extension services in Kenya. T&V was introduced in Kenya by the World Bank and has since been supported through two successive projects. The impact of the projects continues to be the subject of much debate.

Gautam and Anderson's paper suggests the need for greater vigilance in empirical analysis, especially about the quality of data used to support Bank policy and the need to validate potentially influential findings.

Using household data from 1990, Bindlish and Evenson found the returns from extension to be very high. But Gautam and Anderson find that the returns estimated by Bindlish and Evenson suffer from data errors, and limitations imposed by cross-sectional data.

After correcting for several data processing and measurement errors, the authors show the results to be less robust than reported by Bindlish and Evenson and highly sensitive to regional effects. When region-specific effects are included, a positive return to extension cannot be established, using Bindlish and Evenson's data set and cross-sectional model specifications.

After testing the robustness of results using a number of tests, Gautam and Anderson could not definitively establish the factors underlying strong regional effects, largely because of the limitations imposed by the cross-sectional framework. Household panel data methods would have allowed greater control for regional effects and would have yielded better insight into the impact of extension.

The impact on agricultural productivity in Kenya expected from T&V extension services is not discernible from the available data, and the impact may vary across districts. The hypothesis that T&V had no impact in Kenya between 1982 and 1990 cannot be rejected. The sample data fail to support a positive rate of return on the investment in T&V.

This paper — a product of the Sector and Thematic Evaluation Division, Operations Evaluation Department — is part of a larger exploration by the department of the effects of the investment in agricultural extension in Kenya. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Madhur Gautam, room G7-026, telephone 202-473-0442, fax 202-522-3123. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at mgautam@worldbank.org or janderson@worldbank.org. (17 pages)

2099. Mutual Funds and Institutional Investments: What Is the Most Efficient Way to Set Up Individual Accounts in a Social Security System?

Estelle James, Gary Ferrier, James Smalhout, and Dimitri Vittas
(April 1999)

Among three options for constructing funded social security pillars, one system — individual accounts invested in the institutional market, with constrained choice among investment companies — appears to offer reduced administrative and marketing costs, significant worker choice, and more insulation from political interference than a single centralized fund or individual investments in the retail market would offer.

One of the main criticisms of the defined-contribution, individual-account components of social security systems is that they are too expensive. James, Ferrier, Smalhout, and Vittas investigate the cost-effectiveness of three options for constructing funded social security pillars:

- Individual accounts invested in the retail market with relatively open choice.
- Individual accounts invested in the institutional market with constrained choice among investment companies.
- A centralized fund without individual accounts or differentiated investments across individuals.

The authors asked several questions: What is the most cost-effective way to organize a system with mandatory individual accounts? How does the cost of an efficient individual account system compare with that of a single centralized fund? And are the cost differentials great enough to outweigh other important considerations?

The authors concentrate on countries with well-functioning financial markets, such as the United States, but make comparative references to developing countries.

Based on empirical evidence about U.S. mutual and institutional funds, the authors found that the retail market (option 1) allows individual investors to benefit from scale economies in asset management — but at the cost of the high marketing expenses needed to attract large pools of small investments.

By contrast, a centralized fund (option 3) can be much cheaper because it achieves scale economies without high marketing costs. But it gives workers no choice and is subject to political manipulation and misallocation of capital.

The system of constrained choice (option 2) is much cheaper than the retail option and only slightly more expensive than a single centralized fund. It allows scale economies in asset management and record-keeping while incurring low marketing costs and allowing significant worker choice. It is also more effectively insulated from political interference than a single centralized fund.

The authors estimate that option 2 would cost only 0.14 percent-0.18 percent of assets annually. Such large administrative cost savings imply a Pareto improvement — so long as choice is not constrained "too much."

This paper — a product of Poverty and Human Resources and Finance, Development Research Group — was prepared for a National Bureau of Economic Research Conference on Social Security held on December 4, 1998. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marianne Leenaerts, room G2-030, telephone 202-458-4264, fax 202-676-0961, Internet address mleenaerts@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at ejames3@worldbank.org or dvittas@worldbank.org. (60 pages)

2100. Decentralization in Regional Fiscal Systems in Russia: Trends and Links to Economic Performance

Lev Freinkman and Plamen Yossifov
(April 1999)

Considering the positive impact decentralization has had on regional economic performance and expenditure structure, Russia's federal government should:

- *Decisively protect local self-governance and budget autonomy.*
- *Make intergovernmental fiscal relations more transparent.*
- *Develop universal models of interactions between regional and municipal governments.*
- *Impose stricter limits on total debt and budget deficits of subnational governments.*

To shed light on decentralization in Russia, Freinkman and Yossifov examine intergovernmental fiscal relations within regions. To analyze trends, they review channels of fiscal allocation within regions — tax sharing and local transfer schemes. To evaluate the potential impact of various fiscal decentralization patterns on regional economic performance (including growth and the budget deficit), they study data on the structure of 89 Russian consolidated regional budgets for 1992–96.

They find that local governments' relative share of Russia's consolidated budget, although substantive (roughly a quarter of the total budget), did not expand after 1994. The federal government's relative role in financing public goods and services declined as the relative role of local governments increased substantially. Local governments collected more revenues in 1996 (6.4 percent of GDP) and spent more than regional governments. They also substantially increased social financing (including health, education, and social protection).

Russia made no progress toward a more transparent system for tax assignments.

The average level of expenditure decentralization is similar for ethnically Russian regions and national republics and *okrugs* but revenue arrangements differ greatly. "True" decentralization has taken place in *oblasts* and *krais,* where local authorities are provided with a bigger share of subnational tax revenues. A redistribution model applies in republics and autonomous *okrugs,* where greater local outlays have been financed through larger transfers from regional governments.

Regions near each other tend to have similar budget arrangements — the result of intensive interactions between neighbors and probably supported by the activities of regional associations. The size of a region's territory does not influence decentralization outcomes.

Fiscal decentralization seems positively related to the share of education spending in regional budgets. And regions with more decentralized finances tend to experience less economic decline.

But budget control is weaker in more decentralized regions. Instability and lack of transparency in intergovernmental fiscal relations provide subnational governments little incentive for responsible fiscal policy. Further decentralization without greater transparency could bring greater debt and deficits.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Europe and Central Asia Region — is part of a larger effort in the unit to study fiscal decentralization in transition economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Zakia Nekaien-Nowrouz, room 04-150, telephone 202-473-9057, fax 202-522-3607, Internet address znekaiennowrouz@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Lev Freinkman may be contacted at lfreinkman@worldbank.org. (50 pages)

2101. Are Wages and Productivity in Zimbabwe Affected by Human Capital Investment and International Trade?

Dorte Verner
(April 1999)

Education, training, and increased openness to international markets appear to improve wages and productivity, but Zimbabwe's labor market is segmented, rather than competitive. Workers with similar skills in different sectors do not earn equal wages.

To analyze what determines wages and productivity in Zimbabwe, Verner analyzes an employer/employee dataset from Zimbabwe's manufacturing sector. Verner finds that:

- Formal education, training, and experience positively affect wages and productivity positively.
- Women are paid roughly 37 percent less than men although they are not measurably less productive.
- There is no strong indication of ethnic discrimination among employees, but Europeans are being paid more in larger firms, although they are marginally less productive than workers of African origin.
- The wage premium for workers who completed secondary school does not necessarily reflect greater productivity but may indicate a shortage of educated workers.
- Workers trained in-house earn more although in-house training does not instantly affect productivity. Training by outside trainers does improve productivity but is not rewarded with higher wages.
- Apprentices are paid more than nonapprentices. Perhaps an apprentice diploma serves as a screening device, when hiring.
- Temporary workers are more productive than permanent workers, perhaps hoping to get a permanent contract.
- Union members earn less than nonunion members despite being more productive. Perhaps union members fight more to have skills upgraded than for wage increases.
- Larger exporting firms are marginally less productive and pay marginally less than the average firm, but are more productive than smaller firms (and their wages match productivity). Workers in larger woods and metals firms are paid less than workers in smaller firms, although they are not less productive.
- Exporting firms benefit more than employees do from trade openness and greater productivity.
- Foreign-owned firms are more productive than other firms (perhaps because of new technology).
- Firms that employ more expatriates tend to pay more. The more expatriates there are in metals firms, the more productive the employees are, perhaps because the expatriates bring knowledge about new technology to the enterprise.
- Employees in the metal and textile sectors are paid more than those in the food sector, but employees in metals are less productive than employees from other sectors.

This paper — a product of Human Development 3, Africa Technical Families — is part of a larger effort in the region to understand how labor markets work in Africa. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hazel Vargas, room I8-138, telephone 202-473-7871, fax 202-522-2119, Internet address hvargas@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at dverner@worldbank.org. (49 pages)

2102. Self-Employment and Labor Turnover: Cross-Country Evidence

William F. Maloney
(April 1999)

The share of the workforce in self-employment and the level of turnover are shown to *be unreliable measures of labor market distortion and rigidity. Both are shown to be more affected by standard economic and demographic variables — the level of formal sector productivity, real interest rates, and education levels — than by labor taxes and barriers to firing.*

Maloney uses cross-country data from Latin America and OECD countries to test the predictions of a simple efficiency wage model (Krebs and Maloney 1998) about the share of the workforce in self-employment and the rate of labor turnover across the process of development and demographic transition.

The model is supported, with numerous demographic, economic, and labor market institutions appearing as important determinants of both self-employment and turnover. Social security taxes on firms and barriers to firing workers appear to reduce the size of the formal sector, and barriers to firing do appear to reduce turnover. But the level of formal sector productivity, real interest rates, and education levels generally have a greater impact.

A central lesson is that it is misleading to use the size of the informal self-employed sector and the rate of labor turnover as indicators of distortion or rigidity without first adjusting for these factors. Somewhat speculatively, Maloney offers adjusted measures that suggest that Latin American labor markets are not especially distorted and are about average in flexibility, with important exceptions.

Central to the theoretical framework is the view that self-employment is a desirable destination for many salaried workers rather than the disadvantaged sector of a labor market segmented by union- or government-induced rigidities. To prevent the loss of investment in training to the informal sector, firms will pay above-market-clearing "efficiency wages," in the process creating unemployment or segmentation that may cut across lines of formality.

This paper — a product of the Poverty Reduction and Economic Management Unit, Latin America and the Caribbean Region is part of a larger effort in the region to understand the functioning of developing country labor markets and the impact of labor legislation. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tania Gomez, room I8-102, telephone 202-473-2127, fax 202-522-0054, Internet address tgomez@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at wmaloney@worldbank.org. (37 pages)

2103. Was the Credit Channel a Key Monetary Transmission Mechanism following the Recent Financial Crisis in the Republic of Korea?

Hyun E. Kim
(April 1999)

A marked decline in bank lending after the recent financial crisis in the Republic of Korea amplified the real effects of the tightened monetary policy implemented in response to the crisis. A substantial excess demand for bank loans in the wake of the crisis was caused essentially by a capital-induced bank credit crunch rather than by a weak demand for loans. This finding reveals compelling evidence of the importance of the credit channel after the crisis.

Kim investigates whether the credit channel is a key monetary transmission mechanism in the Republic of Korea, especially after its recent financial crisis.

To identify the existence of a distinctive credit channel (especially the bank lending channel), he applies two empirical tests to both aggregate financial data and disaggregated bank balance sheet data.

As a more definitive analysis of the role of the credit channel, he estimates a disequilibrium model of the bank loan market, specifying separate loan demand and supply equations to characterize the credit crunch and identify its intensity in the wake of the crisis.

He finds convincing evidence of the importance of the credit channel in the aftermath of the crisis. Bank lending plays a significant independent role in amplifying the real effects of the tightened monetary policy implemented in response to the crisis.

There is strong evidence to suggest a substantial excess demand for bank loans following the crisis. This excess demand was caused by a sharp decline in loan supply largely attributable to pervasive and stringent bank capital regulation (a capital-induced bank credit crunch), rather than by weak demand for loans.

This paper — a product of the Financial Sector Development Unit, East Asia and Pacific Sector Units — was presented at the international conference on Exchange Rate Stability and Currency Board Economics on November 18–29, 1998, in Hong Kong. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Debbie Peterson, room MC3-844, telephone 202-473-2692, fax 202-522-3454, Internet address dpeterson2@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at hkim8@worldbank.org. (32 pages)

2104. The Relative Effects of Skill Formation and Job Matching on Wage Growth in Ethiopia

Taye Mengistae
(April 1999)

Estimated age and job seniority profiles of wages and marginal productivity in Ethiopia suggest that both skill formation and job matching significantly affect growth of wages and productivity over time. However, job matching is by far the more important of the two sources of growth in wages and productivity.

Mengistae analyzes production and labor market data for a random selection of small to medium-size firms in Ethiopia to answer two questions:

- Does a worker's marginal productivity increase with time in the labor market or with job seniority, as must be the case if on-the-job skill formation or job matching has anything to do with the dynamics of wages observed in the data?
- Assuming that marginal productivity grows with experience or seniority, is skill formation more or less important than job matching as a source of growth in productivity?

The main feature of Mengistae's analysis is the joint regression of the log of the average product of hours in a firm and the log of average hourly earnings of a firm's employees on the shares of experience-seniority cells of workers in total annual hours in the firm.

Marginal productivity falls as experience in the labor market passes the 15-

year mark, but the expected marginal product of a mobile worker with 16 or more years of experience is still nearly 80 percent higher than that of the base group.

The between-jobs growth of hourly wages with potential experience is also large, but not as large as growth in marginal productivity for workers with less than 15 years of experience.

Mengistae concludes that job matching is far more important than skill formation as a source of growth in productivity. Net mobility gains account for at least twice the share of the return to skill formation in the observed between-jobs growth of wages with market experience.

The rate of return to skills formation is higher in the United States than in Ethiopia. The relative return to skills formation is probably lower in Ethiopia partly because the flow of information about the labor market is more restricted there.

This paper — a product of the Development Research Group — is part of a larger effort in the group to identify firm-level sources of growth in productivity. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Anna Regina Bonfield, room MC3-354, telephone 202-473-1248, fax 202-522-3518, Internet address abonfield@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at tmengistae@worldbank.org. (41 pages).

2105. Wage Rates and Job Queues: Does the Public Sector Overpay in Ethiopia?

Taye Mengistae
(April 1999)

Analysis of recent household survey data from Ethiopia suggests a huge public sector pay premium. This seems to have contributed to the creation of a large queue for public sector jobs.

The public sector's share in wage employment is higher in Africa — including Ethiopia's urban labor market — than in developed economies. Fuller unionization, greater job security, and more generous nonwage benefits in the public sector lead one to assume that workers might queue up for public sector jobs. Do higher wage rates in Ethiopia's public sector create such a queue?

Mengistae extends Lee's two-stage structural probit analysis to test (with data from a recent urban household survey) and measure the existence and scope of such a queue for public sector jobs in Ethiopia.

The results reject the absence of job rationing in favor of an implicit queue of most private sector workers for public sector jobs. The queue exists mainly because of popular expectations of a wage premium (between 11 and 40 percent) in the public sector.

Controlling for individual differences in expectations of the sectoral wage differences, Mengistae finds that skill does not significantly affect a worker's sector preferences, but some social characteristics do.

A worker with a traditional farming background is more likely to be in the queue than is a second-generation urban dweller. This is interesting, considering that the influx of rural migrants to urban centers in the last few decades has been partly fueled by hopes of public sector employment.

On average, women are more likely than men, and workers in provincial towns more likely than workers in the capital, to prefer public sector jobs.

Level of schooling and job experience do not seem to affect preferences for the public over the private sector.

The probability of a worker's being selected from the public sector job queue decreases with the wage rate the worker potentially commands as a public sector employee. Workers on the lower end of the pay scale are more likely to be selected.

Among workers who join the queue for public sector jobs, men are more likely to be hired than women and skilled workers are more likely to be hired than less-skilled workers.

This paper — a product of the Development Research Group — is part of a larger effort in the group to understand the link between public sector employment and the performance of the labor market. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Anna Regina Bonfield, room MC3-354, telephone 202-473-1248, fax 202-522-3518, Internet address abonfield@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at tmengistae@worldbank.org (40 pages).

2106. Subjective Economic Welfare

Martin Ravallion and Michael Lokshin
(April 1999)

As conventionally measured, current household income relative to a poverty line can only partially explain how Russian adults perceive their economic welfare. Other factors include past incomes, individual incomes, household consumption, current unemployment, risk of unemployment, health status, education, and relative income in the area of residence.

Paradoxically, when economists analyze a policy's impact on welfare they typically assume that people are the best judges of their own welfare, yet resist directly asking them if they are better off. Early ideas of "utility" were explicitly subjective, but modern economists generally ignore people's expressed views about their own welfare. Even using a broad set of conventional socioeconomic data may not reflect well people's subjective perceptions of their poverty.

Ravallion and Lokshin examine the determinants of subjective economic welfare in Russia, including its relationship to conventional objective indicators. For data on subjective perceptions, they use survey responses in which respondents rate their level of welfare from "poor" to "rich" on a nine-point ladder.

As an objective indicator of economic welfare, they use the most common poverty indicator in Russia today, in which household incomes are deflated by household-specific poverty lines.

They find that Russian adults with higher family income per equivalent adult are less likely to place themselves on the lowest rungs of the subjective ladder and more likely to put themselves on the upper rungs.

But current household income does not explain well self-reported assessments of whether someone is poor or rich. Expanding the set of variables to include incomes at different dates, expenditures, educational attainment, health status, employment, and average income in the area of residence doubles explanatory power.

Healthier and better educated adults with jobs perceive themselves to be better off, controlling for income.

The unemployed view their welfare as lower, even with full income replacement.

Individual income matters independent of per capita household income.

Relative income also matters. Living in a richer area lowers perceived economic welfare, controlling for income and other factors.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to better understand the relationship between "objective" and "subjective" economic welfare. The study was funded by the Bank's Research Support Budget under the research project "-Policies for Poor Areas" (RPO 681-39). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at mravallion@worldbank.org or mlokshin@worldbank.org. (39 pages)

2107. Approaches to Liberalizing Services

Sherry M. Stephenson
(May 1999)

Liberalization of services at the subregional level has followed two broad approaches — the GATS model and the NAFTA model — neither of which automatically guarantees the full liberalization of trade in services. The question that participants in integration efforts at both the subregional and the broader regional level must ask is what kind of approach to liberalizing services offers both maximum transparency and the greatest degree of nondiscrimination for service suppliers.

Only since completion of the Uruguay Round have developing countries in East Asia and the Western Hemisphere shown interest in liberalizing services. Ambitious efforts are now being made to incorporate services in liberalization objectives of both subregional and regional integration efforts, including in the Asia-Pacific region under APEC and in the Western Hemisphere under the Free Trade Area of the Americas (FTAA) process.

At the subregional level, member countries of both ASEAN (in East Asia) and MERCOSUR (in Latin America) have chosen to follow the liberalization model set forth in the World Trade Organization's (WTO) General Agreement on Trade in Services (GATS), and to open their services markets gradually and piecemeal.

In the Western Hemisphere, Mexico has successfully promoted the NAFTA model of a more comprehensive liberalization of services markets — and several Latin American countries have adopted the same approach.

Regionally, APEC has chosen a concerted voluntary approach to liberalizing services markets.

Within the Western Hemisphere, participants are defining which approach they will use in the negotiations on services launched as part of the FTAA in April 1998.

In all these efforts, a stated desire to promote more efficient services markets is often hindered by reluctance to open services markets rapidly or comprehensively because of historically entrenched protectionism in the sector and ignorance of the regulatory measures that impede trade in services.

Presumably it would be easier to liberalize services at the subregional level, among countries at similar stages of development (although liberalization's economic value there might be questioned). Liberalizing services at the broader regional level is a difficult and ambitious goal, given the diversity of countries involved in such efforts. Thus liberalization will probably move more slowly at the regional than at the subregional level — perhaps even more slowly than at the multilateral level. It is possible that the new round of multilateral talks on services scheduled to begin under the WTO in 2000 may well eclipse the recently begun regional efforts.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to assist developing countries in the multilateral trade negotiations. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at sstephenson@oas.org. (93 pages)

2108. Public Goods and Ethnic Divisions

Alberto Alesina, Reza Baquir,
and William Easterly
(May 1999)

The public goods problem is linked to another, almost insurmountable problem: ethnic divisions. Ethnic conflict is an important determinant of local public finances.

Alesina, Baquir, and Easterly present a model that links heterogeneity of preferences across ethnic groups in a city to the amount and type of public good the city supplies.

Results show that the shares of spending on productive public goods — education, roads, sewers, and trash pickup — in U.S. cities (metro areas/urban counties) are inversely related to the city's (metro area's/county's) ethnic fragmentation, even after controlling for other socioeconomic and demographic determinants.

They conclude that ethnic conflict is an important determinant of local public finances. In cities where ethnic groups are polarized, and where politicians have ethnic constituencies, the share of spending that goes to public goods is low.

Their results are driven mainly by how white-majority cities react to varying minority-group sizes. Voters choose lower public goods when a significant fraction of tax revenues collected from one ethnic group is used to provide public goods shared with other ethnic groups.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to study the political economy of policymaking. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kari Labrie, room MC3-456, telephone 202-473-1001, fax 202-522-1155, Internet address klabrie@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at alesina@mit.edu, baqir@econ.berkeley.edu, or weasterly@worldbank.org. (38 pages)

2109. When Is Fiscal Adjustment an Illusion?

William Easterly
(May 1999)

A simple model shows that when an outside agent forces a reduction in a government's conventional deficit (debt accumulation), the government will respond by lowering its asset accumulation or by increasing hidden liabilities. That leaves net worth unchanged, so fiscal adjustment is an illusion.

Fiscal adjustment is an illusion when it lowers the budget deficit or public debt but leaves the government's net worth unchanged, says Easterly.

Conventional measures of the budget deficit largely measure the change in explicit public sector liabilities (debt). A more appropriate measure of the deficit would be the change in public sector net worth, but many criticize this concept as impossible to measure.

Easterly takes a positive, rather than normative, approach to the net worth definition of fiscal balance. A simple model shows that when an outside agent forces a reduction in a government's conventional deficit (debt accumulation), the government will respond by lowering its asset accumulation or by increasing hidden liabilities. That leaves net worth unchanged, so fiscal adjustment is an illusion.

He performs some simple empirical tests on the observational predictions of the model, examining a sample of countries with World Bank and International Monetary Fund adjustment programs and case studies of Maastricht Euro countries.

The results confirm the model predictions: Fiscal adjustment in these countries was at least partly an illusion.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to study the political economy of policymaking. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kari Labrie, room MC3-456, telephone 202-473-1001, fax 202-522-1155, Internet address klabrie @worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at weasterly @worldbank.org. (32 pages)

2110. Life during Growth: International Evidence on Quality of Life and Per Capita Income

William Easterly
(May 1999)

Changes in a home country's quality-of-life indicators possibly depend as much on changes in world *income as on changes in* home *country growth. The evidence that life gets better during growth is surprisingly uneven. The cross-country relationship between income and diverse indicators of the quality of life remains strong.*

Remarkably diverse indicators show quality of life across nations to be positively associated with per capita income. But *changes* in quality of life as income *grows* are surprisingly uneven. Moreover, in either level or changes, the effect of exogenous shifts over time is surprisingly strong.

It is possible that changes in a home country's quality-of-life indicators depend as much on changes in *world* income as on changes in *home* country growth. The improvement in life expectancy everywhere, for example, may have reflected technical breakthroughs in antibiotics associated with world economic growth. The strong results on exogenous time shifts point in this direction.

Easterly reaches this conclusion using a panel data set of 81 indicators covering up to four periods (1960, 1970, 1980, and 1990). The indicators cover seven subjects: health, education, individual rights and democracy, political instability and war, transport and communications, inequality across class and gender, and "bads."

With a seemingly unrelated regressions (SUR) estimator in levels, per capita income has an impact on the quality of life that is significant, positive, and more important than exogenous shifts for 32 of 81 indicators.

With a fixed effects estimator, growth has an impact on the quality of life that is significant, positive, and more important than exogenous shifts for 6 of 69 quality-of-life indicators.

The evidence that life gets better during growth is surprisingly uneven. The cross-country relationship between income and diverse indicators of the quality of life remains strong.

Easterly speculates about explanations for the pattern of results, such as the long and variable lags that may come between growth and changes in the quality of life, and the possibility that global socioeconomic progress is more important than home country growth for many quality-of-life indicators.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to study the political economy determinants of policymaking. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kari Labrie, room MC3-456, telephone 202-473-1001, fax 202-522-1155, Internet address klabrie@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at weasterly@worldbank.org. (31 pages)

2111. Agricultural Land Reform in Postwar Japan: Experiences and Issues

Toshihiko Kawagoe
(May 1999)

Land reform in Japan after World War II has long been considered one of the most successful agrarian reform projects in the world. But does empirical research support that reputation? Or was land reform only a political success?

Immediately after World War II, drastic agricultural land reform was implemented in Japan. This reform has been considered one of the most successful agrarian reform projects in the world. It is often said that the reform gave former tenant farmers new incentives, which contributed to the rapid growth of Japanese agriculture, but little empirical evidence has been presented to support that assertion.

Most past studies discussed the impact of reform without distinguishing between political and economic issues. How was the agrarian structure changed by reform? What kind of economic and political issues were raised, solved, or remained intact?

Kawagoe explores the political and economic motives for reform and the conditions that allowed such drastic reform to succeed. He also identifies economic issues that were inoculated by the reform, and chronologically traces reform's progress.

His conclusion: Japanese land reform succeeded politically but, as an industrial policy, brought serious economic problems. Japan's reform experience offers precious lessons to developing countries now intent on implementing agrarian reform.

Land reform in Japan demolished a class structure based on landholding. Landlords were no longer supreme and rural society was restructured, so the rural population became supportive of the ruling conservative party. But land reform had little effect on agricultural production. Land ownership was transferred from landlords to tillers of the soil, and small tenant farmers became small owner-cultivators, with no apparent change in farm size. The traditional agricultural production structure from prewar Japan remained.

Agriculture grew after the war, but not because of land reform — possibly because of greater technical knowledge and the recovery of critical inputs, such as fertilizer, that were in short supply during the war.

The income and standard of living of rural people may have improved, but it is not clear to what extent land reform contributed to capital formation in agriculture. More empirical work is needed.

This paper — a product of Rural Development, Development Research Group — is part of a larger effort in the group to provide background information for the Bank's rural development projects. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-544, telephone 202-473-3716, fax 202-522-1151, Internet address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at tkawagoe@worldbank.org. May 1999. (54 pages)

2112. Industrial Policy after the East Asian Crisis: From "Outward Orientation" to New Internal Capabilities?

Ashoka Mody
(May 1999)

Before East Asia's financial meltdown in 1997, many believed that the entrepreneurial state contributed to the East Asian "miracle" by accelerating industrial development in a "market-friendly" way. The now-evolving international consensus on industrial policy emphasizes a hands-off approach, with activist government playing a reduced role and competition policy playing an important role. But implementing such a policy will require sophisticated new skills in public administration.

Before East Asia's financial meltdown in the second half of 1997, there appeared to be prospects for an uneasy consensus on the East Asian "miracle," a consensus that recognized the role of the entrepreneurial state in accelerating industrial development but emphasized the "market-friendly" nature of the state's interventions.

After the financial crisis, East Asian policies and institutions are once again under scrutiny — for their failures rather than for their miracles.

Mody finds that the prospects for a consensus that incorporated the East Asian experience were ill founded. East Asian policymakers emphasized growth through quantitative targets; price signals played a significant but secondary role.

Mody illustrates these propositions by examining trade policy, industrial conglomerates, and the provision of physical infrastructure.

The evolving international consensus on industrial policy, which predates the Asian crisis, emphasizes a hands-off approach in which an activist government plays a reduced role and competition policy plays an important role.

But policies emphasizing greater competition and a level playing field — implicitly thought to require less government action — may require more government expertise, not less. If implementing a 10 percent export subsidy is difficult, consider the difficulty of determining whether a firm is exercising market power or restraining trade. So the prospect of governments stepping back may be unrealistic.

The new consensus also proposes "deep integration," or the adoption of uniform standards in such areas as competition policy and labor and environmental standards.

For East Asia, the shift to the international consensus may be appropriate because government-driven growth has declined in intellectual respectability. Also, it may be time to consolidate the gains from the rapid trade-led growth by focusing on creating a stronger incentive structure for efficiently using resources.

The current consensus is based on strong priors rather than on solid empirical evidence, however, and the dangers of international uniformity in policy are evident.

This paper — a product of the Development Prospects Group — is part of a larger effort in the group to analyze trends in the global economy. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sydnella Kpundeh, room MC6-762, telephone 202-473-9591, fax 202-522-2578, Internet address skpundeh@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at amody@worldbank.org. (33 pages)

2113. Wage Determination and Gender Discrimination in a Transition Economy: The Case of Romania

Stefano Paternostro and David E. Sahn
(May 1999)

Romania's labor code stipulates equal pay for equal work. In reality gender discrimination is found in both urban and rural labor markets. While the observed bias in urban areas is comparable with that found in other Western countries, in rural settings gender discrimination is much greater than in the West.

Paternostro and Sahn analyze wage determination and gender discrimination in Romania using the 1994 Romanian Household Survey. They estimate wages for men and women in urban and rural areas using a Heckman selection model. They analyze gender discrimination in offered wages, to address the methodological shortcomings found in the literature.

Increasing returns to education and experience are consistently significant for both men and women in urban and rural areas. Returns to education are greater in rural than in urban areas, especially for women.

Labor markets are segmented regionally, probably as a result of the country's economic history, especially the spatial allocation of resources under a centrally planned economy. Only with economic liberalization has the specialization of specific regions translated into differences in regional performance and hence local economic differences.

They found discrimination against women in both urban and rural labor markets, especially at low levels of education. The observed bias against women in urban areas is comparable to that found in other Western countries — but in the region's rural settings the bias is much greater than in the West. With the adjustment to market forces, as less-skilled workers face increasing difficulties in the region, women's relative wages may be expected to decline further.

Discrepancy in pay also directly affects the level of pensions, unemployment benefits, and other means-tested benefits to workers, contributing to pauperization.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to study changes in welfare and inequality during the transition. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nadege K. Nouviale, room J7-269, telephone 202-473-4514, fax 202-473-8466, Internet address nnouviale@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at spaternostro@worldbank.org or david.sahn@cornell.edu. (32 pages).

2114. Economic Reforms and Total Factor Productivity Growth in Latin America and the Caribbean (1950–95): An Empirical Note

Pablo Fajnzylber and Daniel Lederman
(May 1999)

On average, economic reforms in Latin America and the Caribbean have been associated with a 1.5 percent yearly increase in the growth rate of total factor productivity. But there are important differences across countries, and in some cases economic reforms have been associated with lower growth in total factor productivity.

Fajnzylber and Lederman rely on a series of growth accounting exercises to determine whether the growth rate of total factor productivity (TFP) or the unexplained portion of GDP growth (after controlling for the accumulation of capital per worker) in 18 Latin American and Caribbean economies has benefited from economic reform.

They use Sachs and Warner (1995) criteria to identify the years of economic reform. They apply growth decomposition analysis and econometric tests to determine whether TFP growth has been significantly higher during periods of economic reform.

Although the growth decomposition analysis assumes that the capital share of output is constant across Latin American countries, the econometric estimates allow for cross-country differences. In ordinary least squares (OLS) regressions and seemingly unrelated regressions (SUR), two alternative dummy variables are used to control for the effects of business-cycle fluctuations on observed rates of TFP growth. In addition, the SUR regressions consider the possibility that Latin American economies face common shocks.

Finally, panel regressions are based on five-year averages of the growth rates of GDP and capital per worker.

The authors find that, on average, economic reforms have been associated with a 1.5 percent yearly increase in the rate of TFP growth. But there are important differences across countries and in some cases economic reforms have been associated with lower TFP growth.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Latin America and the Caribbean Region — is part of a larger effort in the Bank to undertake regional studies to shed light on policy-relevant issues. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sandra Holt, room I8-122, telephone 202-473-7859, fax 202-614-0235, Internet address sholt@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Daniel Lederman may be contacted at dlederman@worldbank.org. (23 pages)

2115. Foreign Investment and Productivity Growth in Czech Enterprises

Simeon Djankov and Bernard Hoekman
(May 1999)

Foreign direct investment had a greater positive impact on total factor productivity in firms in the Czech Republic over a four-year period than joint ventures did, suggesting that parent firms transferred more know-how to affiliates than joint venture firms got from their partners. Firms without foreign partners experienced negative spillover effects, possibly because fewer training efforts made them less able to absorb and benefit from the diffusion of know-how.

Firm-level data for the Czech Republic (1992–96) suggest that foreign investment had a positive impact on recipient firms' total factor productivity (TFP) growth. This result is robust to corrections for the sample-selection bias that prevails because foreign investment tends to go to firms with above-average productivity performance.

This result is not surprising, given the presumption that foreign investors transfer new technologies and knowledge to partner firms. With some lag, this is likely to be reflected in greater TFP growth.

Foreign direct investment appears to have a greater impact on TFP growth than joint ventures, suggesting that parent firms are transferring more know-how (soft or hard) to affiliates than joint venture firms get from their partners.

Joint ventures and foreign direct investment together appear to have a negative spillover effect on firms that do not have foreign partnerships. This effect is relatively large and statistically significant. But if the focus is restricted to the impact of foreign-owned affiliates (foreign direct investment) on all other firms in an industry, the magnitude of the negative effect becomes much smaller and loses statistical significance.

This result, together with the fact that joint ventures and foreign direct investment together account for significant shares of total output in many industries, suggests that more research is needed to determine how much knowledge diffuses from firms with strong links to foreign firms to firms that do not have such links. Especially important is the extent of spillovers among joint venture firms and between foreign affiliates and firms with joint ventures.

Insofar as joint venture firms invest more in technological capacity (as suggested by their training efforts), those firms could be expected to be better able to absorb and benefit from the diffusion of know-how. The absence of such capacity may underlie the observed negative spillover effect on other firms in the industry. Longer time series and collection of data on variables that measure firms' in-house technological effort would help identify the magnitude and determinants of technological spillovers.

This paper — a product of the Financial Economics Group — is part of a larger effort in the group to understand the transition process in the Czech Republic. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC9-622, telephone 202-473-3722, fax 202-522-2031, Internet address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at sdjankov@worldbank.org or bhoekman @worldbank.org. (24 pages)

2116. Does Child Labor Displace Schooling? Evidence on Behavioral Responses to an Enrollment Subsidy

Martin Ravallion and Quentin Wodon
(May 1999)

Bangladesh's Food-for-Education program, offering a stipend considerably less than the mean child wage, was enough to ensure nearly full school attendance among participants. The enrollment subsidy also reduced the incidence of child labor, but that effect accounted for only a small proportion of the increase in school enrollment.

Ravallion and Wodon try to determine whether children sent to work in rural Bangladesh are caught in a poverty trap, with the extra income to poor families from child labor coming at the expense of the children's longer-term prospects of escaping poverty through education.

The poverty trap argument depends on children's work being substitutable for schooling. Casual observations and the descriptive statistics available from surveys seem to offer little support for the argument.

To explore the question more deeply, Ravallion and Wodon use a targeted school stipend to identify how much child labor substitutes for schooling. They find that Bangladesh's Food-for-Education program is a strong incentive for school attendance. A stipend with a value considerably less than the mean child wage was enough to ensure nearly full school attendance among participants.

The enrollment subsidy also reduced the incidence of child labor, an effect that accounted for only a small proportion of the increase in school enrollment. The reduction in the incidence of child labor among boys (girls) represents about one-quarter (one-eighth) of the increase in their school enrollment rate. Parents are clearly substituting other uses of their children's time to secure the current income gain from access to the program, with modest impact on earnings from their children's work.

The authors' tests were limited. Work may well displace time for doing homework or attending after-school tutorials, for example. Ravallion and Quentin were unable to identify such effects from the data available.

There may also be other welfare losses to children from work (such as exposure to an unsafe working environment) as well as welfare gains (such as skills learned from working that enhance returns to schooling).

But their results do lead them to question the seemingly common view that child labor is a major factor perpetuating poverty in Bangladesh by keeping children from poor families out of school.

This paper — a joint product of Poverty and Human Resources, Development Research Group, and Poverty Reduction and Economic Management Sector Unit, Latin America and the Caribbean Region — is part of a larger effort in the Bank to study behavioral responses to social programs . Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at mravallion@worldbank.org or qwodon @worldbank.org. (21 pages)

2117. On the Size and Number of Regional Integration Arrangements: A Political Economy Model

Soamiely Andriamananjara
(May 1999)

Left alone, the current wave of regional trade agreements will probably not lead to global free trade. Vigorous multilateral trade agreements — encouraging open membership policies and the lowering of external tariffs when internal tariffs are removed — are essential to fully liberalizing the global trading system.

Will the current wave of regional integration arrangements lead to the world being divided into competing inward-looking trading blocs? Or will it lead to a more open multilateral trading system? Using a multicountry political economy model, and after having shown that global free trade is optimal, Andriamananjara investigates the possibility of achieving it through regionalism.

An outsider country considering entering a trading bloc must weigh *the tradeoff between the costs of opening its own market to more foreign competition and the gains from getting better access to the bloc's preferential market.* The gain of access is always larger, so an outsider would always want to apply for membership in the existing bloc. If the bloc policy is open membership, its expansion would result in global free trade.

But if member countries can accept or reject new members, expansion of the bloc is unlikely to yield global free trade. When deciding whether to accept or reject a new member, an insider compares *the gains from getting preferential access to the new member's market with the losses from having to share its original preferential market with the new member.* When the bloc is small, the gains are large enough to offset the losses, so insiders are willing to accept new members. As the bloc expands, the insiders' incentive for expanding decreases, eventually to zero. If only one regional integration arrangement were allowed to form, insiders would stop accepting new members when half the world belonged to the bloc.

The remaining outsiders would probably form a bloc of their own, which would lead members of the original bloc to increase its size in anticipation of the creation of the second bloc. *The threat of regionalism by outsiders would foster larger regional integration arrangements.* In this model, the typical subgame perfect equilibrium would be two blocs, one of them containing roughly two-thirds of the world, the other containing roughly one-third.

Even if blocs form and merge *simultaneously,* yielding progressively larger symmetrical blocs, they would fail to converge in a single bloc unless the external tariff were low enough. In other words, global free trade could be achieved through bloc expansion *if trading blocs lowered their external tariffs when abolishing their internal tariffs.*

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to examine the economics of regionalism and development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at soamiely@wam.umd.edu. (37 pages)

2118. Developing Countries and the Next Round of Multilateral Trade Negotiations

Anne O. Krueger
(May 1999)

Broad-based liberalization is in the interests of developing countries.

Developing countries became full-fledged participants in multilateral trade negotiations only with the Uruguay Round, during which they succeeded in bringing agriculture into the GATT/WTO, reaching agreement on phasing out the Multi-Fibre Arrangement within 10 years, and beginning work on services, among other things.

Their overriding interest in the new round is still to ensure the healthy expansion of an open multilateral trading system.

Developing countries should seek across-the-board liberalization rather than zero-for-zero reductions, which tend to favor the interests of industrial countries (which focus on sectors in which they have comparative advantage) and diminish the support for further cuts.

Liberalization of agricultural trade provides important opportunities. Developing countries have a considerable stake in reducing agricultural protection and subsidies and prohibiting agricultural taxes and export quotas.

Of particular interest are agreements covering services — including, for example, agreements on ways to permit the temporary immigration of construction workers. It is important that labor standards not be used to stifle competition from labor-abundant developing countries — that any agreement about labor standards not raise the costs of unskilled labor in countries whose comparative advantage lies in exported products that use unskilled labor extensively — and that excessively high product standards not be imposed.

Developing countries can increase their leverage substantially by forming coalitions based on common interests in a wide range of areas (as the Cairns group did in the Uruguay Round).

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to identify opportunities for developing countries in the WTO 2000 negotiations. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at akrueger@leland.stanford.edu. (33 pages)

2119. Tax Deductions, Environmental Policy, and the "Double Dividend" Hypothesis

Ian Parry and Antonio Bento
(May 1999)

Recent studies find that environmental tax swaps typically exacerbate the costs of the tax system and therefore do not produce a "double dividend." This paper extends previous models by incorporating tax-favored consumption goods. In this setting, the efficiency gains from recycling environmental tax revenues are larger because preexisting taxes distort the consumption bundle, in addition to factor markets. A genuine double dividend is then found.

Parry and Bento find that incorporating tax-favored consumption in models of environmental tax swaps may overturn key results from earlier studies. In particular, a revenue-neutral pollution tax (or auctioned permits) can produce a substantial "double dividend" by reducing both pollution and the costs of the tax system. The second dividend arises because the welfare gain from using environmental tax revenues to cut labor taxes is much larger when labor taxes also distort the choice among consumption goods. Indeed (ignoring environmental benefits), the overall costs of a revenue-neutral pollution tax are negative in the benchmark simulations, at least for pollution reductions up to 17 percent, and possibly up to 42 percent.

In addition, Parry and Bento show that the presence of tax-favored consumption may drastically increase the efficiency gain from using (revenue-neutral) emissions taxes (or auctioned emissions permits) rather than grandfathered emissions permits.

This paper — a product of Infrastructure and Environment, Development Research Group — is part of a larger effort in the group to study regulatory policies in a second-best setting. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Roula Yazigi, room MC2-533, telephone 202-473-7176, fax 202-522-3230, Internet address ryazigi@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at parry@rff.org or abento@worldbank.org. (39 pages)

2120. Can Africa Export Manufactures? The Role of Endowment, Exchange Rates, and Transaction Costs

Ibrahim A. Elbadawi
(May 1999)

Africa's poor performance in manufactured exports in the 1990s (relative to East Asia) appears to be largely the result of bad policies — especially policies that affect transaction costs.

Elbadawi analyzes the determinants of manufactured exports in Africa and other developing countries, guided by three pivotal views on Sub-Saharan Africa's (Africa's) prospects in manufactured exports:

• Adrian Woods holds that Africa cannot have comparative advantage in exports of labor-intensive manufactures (even if broadly defined to include raw material processing) because its natural resources endowment is greater than its human resources endowment (*endowment thesis*).

- Paul Collier argues that, for most of Africa, unusually high (policy-induced) transaction costs are the main source of Africa's comparative disadvantage in manufactured exports (*transaction thesis*).
- A third approach (Elbadawi and Helleiner) emphasizes the importance of stable, competitive real exchange rates for profitability of exports in low-income countries (*exchange rate–led strategy*).

Elbadawi tests the implications of these three views with an empirical model of manufactured export performance (manufactured exports' share of GDP), using a panel of 41 countries for 1980–95. His findings:

- Corroborate the predictions of the transaction thesis, in that transaction costs are major determinants of manufactures exports. Investing in reducing these costs generates the highest payoff for export capacity.
- Lend support for the exchange rate–led strategy.

After controlling for other factors, ratios of natural resources per worker were not robustly associated with export performance across countries, but this cannot be taken as formal rejection of the endowment thesis — unless one is prepared to assume that manufactured exports' share of GDP was highly correlated with ratios of manufactured to aggregate (or primary) exports. But this is not unlikely.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to research manufactures exports' competitiveness. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, Internet address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at ielbadawi@worldbank.org. (19 pages)

2121. Fiscal Management in Federal Democracies: Argentina and Brazil

William Dillinger and Steven B. Webb
(May 1999)

Argentina and Brazil — two of the most decentralized public sectors in Latin America and (along with Colombia and India) among the most decentralized democracies in the developing world — faced similar problems in the 1980s: excessive public deficits and high inflation exacerbated by subnational deficits. In the 1990s, Argentina was more successful at macroeconomic stabilization, partly because it imposed harder budget constraints on the public sector nationally and partly because it had stronger party control of both national legislators and subnational governments.

In shifting to decentralized public finances, a country's central government faces certain fiscal management problems. First, during and soon after the transition, unless it reduces spending or increases its own tax resources, the central government tends to have higher deficits as it shifts fiscal resources to subnational governments through transfers, revenue sharing, or delegation of tax bases. Reducing spending is hard not only because cuts are always hard but because subnational governments might not take on expected tasks, leaving the central government with a legal or political obligation to continue spending for certain services.

Second, after decentralization, the local or state government faces popular pressure to spend more and tax less, creating the tendency to run deficits. This tendency can be a problem if subnational governments and their creditors expect or rely on bailouts by the central government. Econometric evidence from 32 large industrial and developing countries indicates that higher subnational spending and deficits lead to greater national deficits.

Dillinger and Webb investigate how, and how successfully, Argentina and Brazil dealt with these problems in the 1990s.

In both countries, subnational governments account for about half of public spending and are vigorous democracies in most (especially the largest) jurisdictions. The return to democracy in the 1980s revived and strengthened long-standing federal practices while weakening macroeconomic performance, resulting in unsustainable fiscal deficits, high inflation, sometimes hyperinflation, and low or negative growth. Occasional stabilization plans failed within a few years. Then Argentina (in 1991) and Brazil (in 1994) introduced successful stabilization plans.

National issues were important in preventing and then bringing about macroeconomic stabilization, but so were intergovernmental fiscal relations and the fiscal management of subnational governments. State deficits and federal transfers were often out of control in the 1980s, contributing to national macroeconomic problems. Stabilization programs in the 1990s needed to establish control, and self-control, over subnational spending and borrowing.

This paper — a product of Poverty Reduction and Economic Management, Latin America and the Caribbean Region — is part of the LCR regional studies program on fiscal decentralization in Latin America. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Alex Lara, room I8-126, telephone 202-458-8148, fax 202-522-2119, Internet address alara@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at wdillinger@worldbank.org or swebb@worldbank.org. (38 pages)

2122. Decentralization and Fiscal Management in Colombia

William Dillinger and Steven B. Webb
(May 1999)

Institutional arrangements have helped Colombia manage the fiscal aspects of decentralization, despite the country's political problems.

Colombia's political geography contrasts sharply with its economy. Physical characteristics and guerilla war fragment the country geographically, yet it has a long tradition of political centrism and macroeconomic stability.

Recently, with political and economic decentralization, there has been some weakening of macroeconomic performance. Dillinger and Webb explore institutional arrangements that have helped Colombia manage the fiscal aspects of decentralization, despite the country's political problems.

Fiscal decentralization proceeded rapidly in Colombia. Education, health, and much infrastructure provision have been decentralized to the *departmentos* and *municipios*.

Decentralization has led to substantial but not overwhelming problems, both in maintaining fiscal balance nationally (as resources are transferred to subnational levels) and in preventing unsustainable deficits by the subnational governments.

The problems have arisen because central government interference prevents departments from controlling their costs and because of expectations of debt bailouts. Both are legacies of the earlier pattern of management from the center, and some recent changes — especially about subnational debt — may improve matters.

Colombia's traditional political process has had difficulty dealing with problems of decentralization because traditional parties are weak in internal organization and have lost de facto rule over substantial territories.

The fiscal problems of subnational government have been contained, however, because subnational governments are relatively weak politically and the central government, for the time being, has been able to enforce restrictions on subnational borrowing.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Latin America and Caribbean Region — is part of a larger effort in the region to examine the macroeconomic consequences of decentralization. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Steven Webb, room I8-137, telephone 202-473-8680, fax 202-522-2119, or William Dillinger, room MC2-323, telephone 202-473-3940. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at wdillinger@worldbank.org or swebb@worldbank.org. (45 pages)

2123. Access to Land in Rural India

Robin Mearns
(May 1999)

To reduce poverty in India through a strategy of rural growth, by increasing the share of farmland operated in small units, requires making land distribution more equitable. Among policy measures recommended: Selectively deregulating land-lease (rental) markets, reducing transaction costs in land markets, critically reassessing land administration and finding ways to make it more transparent and to improve land administration incentive structures, promoting women's independent land rights through policy measures to increase women's bargaining power, and strengthening institutions in civil society to improve awareness, monitoring, and pressure for reform of policies and procedures that limit access to land.

Access to land is deeply important in rural India, where the incidence of poverty is highly correlated with lack of access to land. Mearns provides a framework for assessing alternative approaches to improving access to land by India's rural poor. He considers India's record implementing land reform and identifies an approach that includes incremental reforms in public land administration to reduce transaction costs in land markets (thereby facilitating land transfers) and to increase transparency, making information accessible to the public to ensure that socially excluded groups benefit.

Reducing constraints on access to land for the rural poor and socially excluded requires addressing five key issues: restrictions on land-lease markets, the fragmentation of holdings, the widespread failure to translate women's legal rights into practice, poor access to (and encroachment on) the commons, and high transaction costs for land transfers.

Among guidelines for policy reform Mearns suggests:

- Selectively deregulate land-lease (rental) markets, because rental markets may be important in giving the poor access to land.
- Reduce transaction costs in land markets, including both official costs and informal costs (such as bribes to expedite transactions), partly by improving systems for land registration and management of land records.
- Critically reassess land administration agencies and find ways to improve incentive structures, to reduce rent-seeking and base promotions on performance.
- Promote women's independent land rights through policy measures to increase women's bargaining power within the household and in society generally.
- Improve transparency of land administration and public access to information, to reduce rent-seeking by land administration officers and to strengthen poor people's land rights (and knowledge thereof).
- Strengthen institutions in civil society to provide the awareness, monitoring, and pressure needed for successful reform and to provide checks and balances on inappropriate uses of state power.

In a companion paper (WPS 2124) the author addresses these issues at the level of a particular state — Orissa, one of India's poorest states — in an empirical study, from a transaction costs perspective, of social exclusion and land administration.

This paper — a product of the Rural Development Sector Unit, South Asia Region — is part of a larger effort in the region to promote access to land and to foster more demand-driven and socially inclusive institutions in rural development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Geraldine Burnett, room MC10-156, telephone 202-458-2111, fax 202-522-2420, Internet address gburnett@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at rmearns@worldbank.org. (50 pages).

2124. Social Exclusion and Land Administration in Orissa, India

Robin Mearns and Saurabh Sinha
(May 1999)

Which factors prevent the rural poor and other socially excluded groups from having access to land in Orissa, India?

Mearns and Sinha report on the first empirical study of its kind to examine — from the perspective of transaction costs — factors that constrain access to land for the rural poor and other socially excluded groups in India. They find that:

- Land reform has reduced large landholdings since the 1950s. Medium-size farms have gained most. Formidable obstacles still prevent the poor from gaining access to land.
- The complexity of land revenue administration in Orissa is partly the legacy of distinctly different systems, which pro-

duced more or less complete and accurate land records. These not-so-distant historical records can be important in resolving contemporary land disputes.

- Orissa tried legally to abolish land-leasing. Concealed tenancy persisted, with tenants having little protection under the law.
- Women's access to and control over land, and their bargaining power with their husbands about land, may be enhanced through joint land titling, a principle yet to be realized in Orissa.
- Land administration is viewed as a burden on the state rather than a service, and land records and registration systems are not coordinated. Doing so will improve rights for the poor and reduce transaction costs — but only if the system is transparent and the powerful do not retain the leverage over settlement officers that has allowed land grabs.

Land in Orissa may be purchased, inherited, rented (leased), or — in the case of public land and the commons — encroached upon. Each type of transaction — and the state's response, through land law and administration — has implications for poor people's access to land. Mearns and Sinha find that:

- Land markets are thin and transaction costs are high, limiting the amount of agricultural land that changes hands.
- The fragmentation of landholdings into tiny, scattered plots is a brake on agricultural productivity, but efforts to consolidate land may discriminate against the rural poor. Reducing transaction costs in land markets will help.
- Protecting the rural poor's rights of access to common land requires raising public awareness and access to information.
- Liberalizing land-lease markets for the rural poor will help, but only if the poor are ensured access to institutional credit.

This paper — a product of the Rural Development Sector Unit, South Asia Region — is part of a larger effort in the region to promote access to land and to foster more demand-driven and socially inclusive institutions in rural development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Geraldine Burnett, room MC10-156, telephone 202-458-2111, fax 202-522-2420, Internet address gburnett@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Robin Mearns may be contacted at rmearns@worldbank.org. (72 pages)

2125. Developing Country Agriculture and the New Trade Agenda

Bernard Hoekman and Kym Anderson
(May 1999)

In the new round of World Trade Organization talks expected in late 1999, negotiations about access to agricultural and services markets should be given top priority, but new trade agenda issues should also be discussed. Including new trade agenda issues would increase market discipline's role in the allocation of resources in agriculture and would encourage nonagricultural groups with interests in the new issues to take part in the round, counterbalancing forces favoring agricultural protection.

A new round of World Trade Organization negotiations on agriculture, services, and perhaps other issues is expected in late 1999. To what extent should those negotiations include "new trade agenda" items aimed at ensuring that domestic regulatory policies do not discriminate against foreign suppliers?

Hoekman and Anderson argue that negotiations about market access should be given priority, as the potential welfare gains from liberalizing access to agricultural (and services) markets are still huge, but new issues should be included too.

Including new trade agenda issues would increase the role of market discipline in the allocation of resources in agriculture and would encourage nonagricultural groups with interests in the new issues to take part in the round, counterbalancing forces in favor of agricultural protection.

They also argue, however, that rule-making efforts to accommodate the new issues should be de-linked from negotiations about access to agricultural markets, because the issues affect activity in all sectors.

This paper — a product of the Development Research Group — is part of a larger effort in the group to analyze options and priorities for developing countries in the run-up to a new round of WTO negotiations. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. Bernard Hoekman may be contacted at bhoekman@worldbank.org or kanderson@economics.adelaide.edu.au. (23 pages)

2126. Liberté, Egalité, Fraternité: Exploring the Role of Governance in Fertility Decline

Monica Das Gupta
(May 1999)

Policies that foster local accountability and social mobility may be conducive not only to rapid development but also to personal efficacy and rapid fertility decline.

Within a short span of human history, a secular decline in fertility has taken place around the world. The timing and pace of this decline correspond broadly with changes in sociopolitical institutions in different parts of the world.

Das Gupta hypothesizes that this shift in childbearing behavior is related to cognitive changes wrought by the move from deeply hierarchical sociopolitical institutions to more egalitarian institutions of modern governance.

These changes have enabled socioeconomic mobility and improved people's ability to shape their own lives, internalizing more of the positive and negative implications of their decisions, including those about childbearing.

Recent work in development economics argues that policies that foster local accountability are the most conducive to rapid development. Das Gupta argues that they also foster personal efficacy and rapid fertility decline.

If true, her hypotheses indicate that one can expect development and fertility decline to be associated. Some policy environments may lead to "win-win" situations of rapid development and fertility decline, while others may generate "lose-lose" outcomes.

This paper — a product of Regulation and Competition Policy, Development Research Group — is part of a larger effort in the group to study social institutions and development outcomes. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Monica Das Gupta, room MC3-579, telephone 202-473-1983, fax 202-522-1153, Internet address mdasgupta@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. (24 pages)

2127. Lifeboat Ethic versus Corporate Ethic: Social and Demographic Implications of Stem and Joint Families

Monica Das Gupta
(May 1999)

Kinship systems profoundly influence household economic strategies and thereby affect a wide range of development outcomes.

Das Gupta distinguishes the *lifeboat* ethic of Northern Europe's stem family system from the *corporate* ethic of North India's joint family system, which has much in common with that of China. She contrasts these family systems to show how norms of residence and inheritance

- Profoundly influence our values and social constructs.
- Shape patterns of conflict and cooperation between people, thus influencing many basic aspects of social organization and behavior.
- Influence health outcomes by categorizing people according to whether their health is promoted or allowed to fail.
- Shape a wide range of other development outcomes, including migration, strategies of household resource management, ways of exploiting commercial opportunities, and the operation of civil society.

Das Gupta develops a number of hypotheses about the nature of these relationships. Some of these are substantiated quantitatively, and others can be tested empirically.

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2128. Learning Outcomes and School Cost-Effectiveness in Mexico: The PARE Program

Gladys Lopez Acevedo
(May 1999)

Roughly doubling the school resources allocated per student overcame a 30 percent deficit in test scores among rural students in Mexico's PARE program.

Past research often attributed most differences in student learning to socioeconomic factors, implying that the potential for direct educational interventions to reduce learning inequality was limited.

Acevedo shows that learning achievement can be improved through appropriately designed and reasonably well-implemented interventions.

She studies the impact of the Programa para Abatir el Rezago Educativo (PARE), a program designed to improve the quality and efficiency of primary education in four Mexican states by improving school resources.

The PARE program increased learning achievement in rural and native schools, where students had typically not performed as well as other students (in Spanish). Not only did students' cognitive abilities improve under the PARE program, but the probability of their continuing in school improved.

In rural areas where the PARE design was fully implemented, test scores for the average student increased considerably. A 30 percent deficit in test scores among rural students could be overcome by roughly doubling the resources allocated per student.

This paper — a product of the Mexico Country Management Unit, Latin America and the Caribbean Region — is part of a larger effort in the region to understand the impact of program intervention in Mexico. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Michael Geller, room I4-142, telephone 202-458-5155, fax 202-522-2093, Internet address mgeller@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at gacevedo@worldbank.org. (23 pages)

2129. Agricultural Extension: Generic Challenges and Some Ingredients for Solutions

Gershon Feder, Anthony Willett, and Willem Zijp
(May 1999)

The agriculture sector must nearly double biological yields on existing farmland to meet food needs, which will double in the next quarter century. A sustainable approach to providing agricultural extension services in developing countries — minimal external inputs, a systems orientation, pluralism, and arrangements that take advantage of the best incentives for farmers and extension service providers — will release the local knowledge, resources, common sense, and organizing ability of rural people.

Is agricultural extension in developing countries up to the task of providing the information, ideas, and organization needed to meet food needs? What role should governments play in implementing or facilitating extension services?

Roughly 80 percent of the world's extension is publicly funded and delivered by civil servants, providing a range of services to the farming population, commercial producers, and disadvantaged target groups. Budgetary constraints and concerns about performance create pressure to show the payoff on investment in extension and to explore alternatives to publicly providing it.

Feder, Willett, and Zijp analyze the challenges facing policymakers who must decide what role governments should play in implementing or facilitating extension services. Focusing on developing country experience, they identify generic challenges that make it difficult to organize extension:

- The magnitude of the task.
- Dependence on wider policy and other agency functions.
- Problems in identifying the cause and effect needed to enable accountability and to get political support and funding.
- Liability for public service functions beyond the transfer of agricultural knowledge and information.

- Fiscal sustainability.
- Inadequate interaction with knowledge generators.

Feder, Willett, and Zijp show how various extension approaches were developed in attempts to overcome the challenges of extension:

- Improving extension management.
- Decentralizing.
- Focusing on single commodities.
- Providing fee-for-service public extension services.
- Establishing institutional pluralism.
- Empowering people by using participatory approaches.
- Using appropriate media.

Each of the approaches has weaknesses and strengths, and in their analysis the authors identify the ingredients that show promise.

Rural people know when something is relevant and effective. The aspects of agricultural extension services that tend to be inherently low cost and build reciprocal, mutually trusting relationships are those most likely to produce commitment, accountability, political support, fiscal sustainability, and the kinds of effective interaction that generate knowledge.

This paper — a joint product of Rural Development, Development Research Group, and the Rural Development Department — is part of a larger effort in the Bank to identify institutional and policy reforms needed to promote sustainable and equitable rural development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Pauline Kokila, room MC3-544, telephone 202-473-3716, fax 202-522-1153, Internet address pkokila@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at gfeder@worldbank.org, awillett @worldbank.org, or wzijp@worldbank.org. (32 pages)

2130. Deep Integration, Nondiscrimination, and Euro-Mediterranean Free Trade

Bernard Hoekman and Denise Eby Konan
(May 1999)

Preferential trade agreements that are limited to the elimination of tariffs for merchandise trade flows are of limited value at best and may be as easily welfare-reducing as welfare-enhancing. It is important that preferential trade agreements go beyond eliminating tariffs and quotas to eliminating regulatory and red tape costs and opening up service markets to foreign competition.

"Deep integration" — explicit government actions to reduce the market-segmenting effect of domestic regulatory policies through coordination and cooperation — is becoming a major dimension of some regional integration agreements, led by the European Union. Health and safety regulations, competition laws, licensing and certification regimes, and administrative procedures such as customs clearance can affect trade (in ways analogous to nontariff barriers) even though their underlying intent may not be to discriminate against foreign suppliers of goods and services.

Whether preferential trade agreements (PTAs) can be justified in a multilateral trading system depends on the extent to which formal intergovernmental agreements are *technically necessary* to achieve the deep integration needed to make markets more contestable. The more need for formal cooperation, the stronger the case for regional integration.

Whether PTAs are justified regionally also depends on whether efforts to reduce market segmentation are applied on a nondiscriminatory basis. If innovations to reduce transaction or market access costs extend to both members and nonmembers of a PTA, regionalism as an instrument of trade and investment becomes more attractive.

Using a standard competitive general equilibrium model of the Egyptian economy, Hoekman and Konan find that the static welfare impact of a "deep" free trade agreement is far greater than the impact that can be expected from a classic "shallow" agreement. Under some scenarios, welfare may increase by more than 10 percent of GDP, compared with close to zero under a shallow agreement.

Given Egypt's highly diversified trading patterns, a shallow PTA with the European Union could be merely diversionary, leading to a small decline in welfare. Egypt already has duty-free access to the European Union for manufactures, so the loss in tariff revenues incurred would outweigh any new trade created.

Large gains in welfare from the PTA are conditional on eliminating regulatory barriers and red tape — in which case welfare gains may be substantial: 4 to 20 percent growth in real GNP.

This paper — a product of the Development Research Group — is part of a larger effort in the group to analyze regional integration agreements. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada @worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at bhoekman @worldbank.org or konan@hawaii.edu. (37 pages)

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Bernard Hoekman and Denise Eby Konan
(May 1999)

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2132. A Regime-Switching Approach to Studying Speculative Attacks: A Focus on European Monetary System Crises

Maria Soledad Martinez Peria
(June 1999)

A regime-switching framework is used to study speculative attacks against European Monetary System currencies during 1979–93.

Peria uses a regime-switching framework to study speculative attacks against European Monetary System (EMS) currencies during 1979–93.

She identifies speculative attacks by modeling exchange rates, reserves, and interest rates as time series subject to discrete regime shifts. She assumes two states: "tranquil" and "speculative."

She models the probabilities of switching between states as a function of fundamentals and expectations.

She concludes that:

• The switching models with time-varying transition probabilities capture most of the conventional episodes of speculative attacks.

• Speculative attacks do not always coincide with currency realignments.

• Both economic fundamentals and expectations determine the likelihood of switching from a period of tranquility to a speculative attack. The budget deficit appears to be an especially important factor driving the probability of switching to a speculative regime.

Given the importance of anticipating and, wherever possible, avoiding crises, it might be useful to conduct forecasting exercises to determine whether the switching framework proposed here can be used to forecast crises in countries outside the sample.

Because currency crises tend to occur simultaneously in two or more countries, it also might be useful to adapt the regime-switching framework to explore the role of contagion in explaining crises.

This paper — a product of Finance, Development Research Group — is part of a larger effort in the group to understand currency crises. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-8526, fax 202-522-1155, Internet address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The author may be contacted at mmartinezperia@worldbank.org. (52 pages)